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Assessing the readiness of higher education to instruct and support students with Asperger's Disorder

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**ASSESSING THE READINESS OF HIGHER EDUCATION TO INSTRUCT AND
SUPPORT STUDENTS WITH ASPERGER'S DISORDER**

A dissertation submitted to
the Graduate College of
Marshall University

In partial fulfillment of
the requirements for the degree of
Doctor of Education
in
Educational Leadership

by
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ABSTRACT

ASSESSING THE READINESS OF HIGHER EDUCATION TO INSTRUCT AND SUPPORT STUDENTS WITH ASPERGER'S DISORDER

This study explores the current ability of higher education to effectively educate and support college students diagnosed with Asperger's Disorder. As the prevalence of autism spectrum disorders increased dramatically during the past decade, it is estimated that tens of thousands of individuals diagnosed with Asperger's Disorder are preparing to enter colleges and universities in the United States. Emerging research details specific service systems and resources necessary to effectively educate and support college students with Asperger's Disorder. Public, four-year institutions of higher education were surveyed (N=578) to assess their current readiness to use identified best-practice methods of support with this student population. Participants (n=230) reported traditional on-campus disability service programs serve as the primary provider of academic, social and communication, and independent living supports for college students with Asperger's Disorder. A minority of institutions reported specialized services developed to meet the unique needs of this student population.

Keywords: Asperger's Disorder, autism spectrum disorders, disability services, higher education

DEDICATION

I first met Joseph Sullivan on March 15, 1985, and the relationship we developed altered the course of my life. Joseph, who years later helped inspire Dustin Hoffman's character Raymond Babbitt in the film *Rain Man*, inspired me with his genuine life perspective and his intense curiosity. Everything important in my life – my education, my career, my marriage, and the building of my family – took place as a result of my relationship with Joseph.

Thank you, Joseph, for nearly 30 years of friendship. And thank you for the insights you've provided me. Without you, I would have been lost.

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Several family members must be thanked for their support. I was grateful when my older children, Kristopher and Maddisen, asked without being prompted about the status of my research. Griffyn and Jaden, my youngest, were patient and understanding during the long hours I spent hunched over a computer keyboard. Mostly, however, I'm fortunate to share a professional interest in autism spectrum disorders with my wife, Dr. Kristy Ellison. Our mutual interest allowed for multiple hours of late-night discussion and debate on this research topic. Those debates greatly influenced this project.

Finally, I owe a debt of gratitude to my colleagues at the West Virginia Autism Training Center at Marshall University, and to the students supported by that agency's College Program for Students with Asperger's Syndrome. Their encouragement and friendship inspired me to remain focused on seeing this topic through to completion.

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ASSESSING THE READINESS OF HIGHER EDUCATION TO INSTRUCT AND SUPPORT STUDENTS WITH ASPERGER'S DISORDER

CHAPTER 1: INTRODUCTION

Background

Viennese physician Hans Asperger first described the pervasive developmental disorder known currently as Asperger's Disorder in his 1944 article "Autistic Psychopathology in Childhood." According to Pearce (2005), the symptoms observed among Asperger's four patients were remarkably similar to those of eleven children described in 1943 by physician Leo Kanner in his publication "Autistic Disturbances of Affective Contact." Kanner and Asperger independently described children with profound impairments in social interaction, abnormal fixations, stereotyped behavior and movement, and motor difficulties. In contrast to Kanner's patients, however, each of the children described by Asperger presented with normal intelligence and language development (Pearce, 2005).

Written in German, Asperger's "Autistic Psychopathology in Childhood" was not translated into English until 1991 (Pearce, 2005). First named by English psychiatrist Lorna Wing in 1981, Asperger's Disorder was not recognized as a diagnosable psychological disorder in the United States until 1994 when it was first included in the American Psychiatric Association's *Diagnostic and Statistical Manual* (Wing, 2005). The delay in placing the disorder into the mainstream of modern psychology resulted in improper diagnosis, education, and treatment for generations of individuals believed instead to be experiencing various forms of mental illness (Wing, 2005).

Wing (2005) suggested the acceptance of Asperger's Disorder as a distinct psychological disorder has been integral to the development of educational and therapeutic services for children

diagnosed with the condition. Wing noted that improved information about the disorder has developed a common understanding among educators and other professionals that symptoms are due to deficits in social learning and communication and are not the result of low intelligence or mental illness. The psychiatrist posited the disorder requires skill development as a primary means for improvement; as Asperger's Disorder is better understood, specific techniques "have been developed to help more able people [diagnosed with the disorder] learn social skills in the absence or impairment of instinctive understanding" (Wing, 2005, p.201).

Asperger's Disorder Defined

Asperger's Disorder is currently understood by diagnosticians to exist within a spectrum of disorders that affect social interaction, communication, and behavior (American Psychiatric Association [APA], 2000). Impairment within these Pervasive Developmental Disorders – commonly called "autism spectrum disorders" (ASD) – varies dramatically; those diagnosed with Autistic Disorder, Asperger's Disorder, or Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) may be mildly or profoundly affected by symptoms (VanBergeijk, Klin, & Volkmar, 2008). Those who live with the disorder typically present with significant impairments in social interactions, have restricted, repetitive, and stereotyped patterns of behavior or interests, and experience significant impairments in social, vocational, or other important areas of day-to-day functioning (APA, 2000). In 2012 the Center for Disease Control (CDC) estimated the prevalence of ASD at one child in 88.

Individuals diagnosed with Asperger's Disorder meet typical milestones for the development of language and communication skills. With the exception of skills used for social interaction, the population experiences no clinically significant delays in cognitive or adaptive functioning abilities (APA, 2000). Those with Asperger's Disorder generally have well developed

vocabularies and “may possess cognitive abilities similar to neurotypical or gifted individuals” (VanBergeijk, et al., 2008, p.1359).

Research demonstrated that those with milder forms of autism are more common within the autism spectrum. VanBergeijk et al., (2008) reported twice as many individuals have Asperger’s Disorder than are diagnosed with the more severe form of classic autism. Still, the authors pointed out: “The main thrust of the academic literature has focused upon the more severe forms of ASDs. Comparatively little attention has been paid to children and young adults who possess milder forms of the disorder” (VanBergeijk, et al., 2008, p.1359).

Asperger’s Disorder in Educational Settings

In Primary and Secondary Education

Huckabee (2003) demonstrated that students with Asperger’s Disorder have the intellectual capacity to learn within a mainstream educational environment. Gibbons and Goins (2008) suggested, however, that professional educators must understand the symptoms of the disorder to provide effective instruction. Gibbons and Goins reported that although students with Asperger’s Disorder may be academically advanced in subjects such as mathematics or history, they typically misread social cues, have difficulty regulating emotion, and misunderstand classroom rules that might be subjective or vague.

Indeed, barriers to instructing students with Asperger’s Disorder may be more challenging outside the realm of academics. Pervasive and debilitating social, emotional, and communication challenges may make students vulnerable to bullying by classmates, or cause them to be excluded by their peers. Wing (2005) reported that in the United Kingdom, the “more able” a student appears (a term to suggest a higher ability to function) the more likely his exclusion by

peers: 21% of the students with severe forms of ASDs were excluded by peers, whereas 29% of those with milder forms of the disorder were excluded.

Poor academic performance may result during primary and secondary school years despite an average to above average intellect for students with Asperger's Disorder due to their literal interpretation of language, poor abilities to problem solve, and difficulties coping with transitions that occur between academic subjects and school activities. According to Gibbons and Goins (2008), sensory difficulties such as extreme sensitivity to noises or to particular food textures can cause behavioral problems to occur during the school day.

Gibbons and Goins (2008) suggested a collaborative, interdisciplinary effort to develop a Section 504 plan or Individualized Education Plan (IEP) may be an effective way to support students with Asperger's Disorder during primary or secondary school years. Coordinated efforts on behalf of the student among school personnel, family members, and community support professionals may improve the assessment of needs and development of accommodations. School counselors, according to Gibbons and Goins, can best serve students as liaisons between the school and outside team members.

Collaborative efforts appear vital to the effective education of school-aged students with Asperger's Disorder. Simpson, Gaus, Biggs, and Williams (2010) recommended instructors of physical education, for example, consult with the classroom teachers of students diagnosed with Asperger's Disorder, attend IEP meetings, and collaborate with other IEP team members in order to provide effective instruction. Agyapong, Migone, and Marckey (2009) reported survey outcomes that reveal more than 87% of teachers surveyed recognized a need for closer collaboration between schools and community based mental health services.

Specialized instruction also appears integral to the successful instruction of students with Asperger's Disorder. Tiger, Bouxsein, and Fisher (2007) reported the effective use of applied behavior analysis techniques to increase in-class response times for question asking and the completion of math assignments. Ryan, Hughes, Katsiyannis, McDaniel, and Sprinkle (2011) highlighted the success of Social Stories, a teaching technique that provides students information about a specific event – often an upcoming event – then adds information about how the student should behave during that event. Isbell and Jolivette (2011) reported the effectiveness of combining written information and visual symbols to teach self-regulation skills to students with Asperger's Disorder and high functioning autism. Hurlbutt and Handler (2010) detailed the importance of practical experience in the education of students with Asperger's Disorder. The authors suggested a well-planned process to assist students as they transition out of high school and into college or the workplace. Hurlbutt and Handler also suggested the process be guided by a teacher, and include activities that promote information gathering and research about a desired life beyond high school. When the process was complete, students had created Career Path binders that served as a portfolio to house their transition plans.

The transition from secondary school can be an uncertain experience for individuals with Asperger's Disorder, especially since mandated state and federal supports for the population expire upon high school graduation (Weigand, 2011). Employment options for individuals with Asperger's Disorder are bleak: Butterworth, Migliore, Nord, and Gelb (2012) reported fewer than 24% of adults with cognitive disabilities are employed, and those who hold jobs are typically under-employed and earn lower wages than non-disabled peers. It is logical to presume that obtaining a degree from a college or university provides greater opportunities for employment. Given the statistics reported by Butterworth et al., (2012), attending college

certainly provides individuals with Asperger's Disorder an alternative to immediate post-high school underemployment or unemployment.

In Higher Education

The obsessive, fixed interest in academic study commonly symptomatic of Asperger's Disorder makes higher education a logical and attractive environment for those with the disorder (Baron-Cohen, Wheelwright, Burtenshaw, & Hobson, 2007; Farrell, 2004). Research suggested students with Asperger's Disorder may be drawn to highly technical vocations that require a college education. For example, Baron-Cohen et al. (2007) discovered a three- to seven-fold increase for ASD among career mathematicians. Wei, Yu, Shattuck, McCracken, and Blackorby (2012) reported that students diagnosed with autism spectrum disorders who enroll in college are most likely to enroll in science, technology, engineering, and mathematics (STEM) courses. Estimates as to how high the number of potential college students with ASD may be continues to rise. Based on the 2006 CDC prevalence estimate of one in 110, VanBergeijk et al. (2008) predicted "between 284,000 and 486,000 individuals" (p.1359) diagnosed with milder forms of autism and under the age of 20 were preparing to enter higher education in America. When factoring in the most current prevalence estimate of one child in 88 (CDC, 2012), thousands more must be added to that prediction.

Colleges and universities in the United States are taking steps to meet the need of this growing student demographic. Marshall University pioneered the provision of specialized academic and social supports for college students with Asperger's Disorder in 2002 (Becker-Cottrill & Ellison, 2007). The Marshall University college support program weblog (www.mucollegesupport.blogspot.com) listed "Higher Education Support Programs" that are embedded on college campuses across the nation. The list of institutions included these: Adelphi

University, Fairleigh Dickenson University, George Mason University, Rutgers University, University of Connecticut, University of Alabama, and Western Kentucky University. Jones (2012) reported Drexel University and Mercyhurst University have developed similar supports in recent years.

Specialized, on-campus programs designed to meet individual needs may be a necessary life-line to college students with Asperger's Disorder (Becker-Cottrill & Ellison, 2007; Dillon, 2007; Ellison, Clark, Cunningham, & Hansen, 2012). Even though there is currently no national database that maintains statistics related to college success for this student population, there is evidence that individualized, specialized supports are effective. Ellison, Hansen, and Clark (2012) reported at the 2012 Autism Society of America national conference that more than 93% of the 75 students with Asperger's Disorder provided individualized supports at Marshall University since 2002 have graduated or are currently attending college and are on track to graduate.

A successful college experience requires more than intellectual capacity. In their book *Students with Asperger's Syndrome: A Guide for College Personnel*, Wolf, Brown, and Bork (2009) discussed the importance of a planned transition into college. The ability of students to develop social networks, demonstrate personal flexibility, structure free time, and plan for and carry out self-advocacy needs are necessary for early success in college. Symptoms specific to Asperger's Disorder, specifically impairments in social interaction and restricted patterns of behavior and interests (APA, 2000) cause students with the disorder significant difficulty in carrying out those necessary activities.

“Joint attention” is another area of challenge experienced by individuals with Asperger's Disorder (Sweeney & Sweeney, 2010). Joint attention is necessary to demonstrate the desire to

share an object, insight or thought with another person, and is a fundamental skill essential for developing peer relationships and expressing emotional content. The researchers suggested the cognitive ability of students with Asperger's Disorder to understand that others have thoughts and emotions separate and unique from them is often severely impaired, creating a perspective from which there is little recognition for the need to engage others in a social manner.

When individuals with Asperger's Disorder do engage in social interaction, it sometimes appears forced or exaggerated. Individuals diagnosed with this disorder often have large vocabularies but experience significant challenges with language pragmatics; they often do not recognize the give-and-take of typical discussion, regularly deliver lengthy monologues during class discussion, answer all questions asked by the professor, and speak to classmates as if they are lecturing on the subject rather than simply engaging in classroom discussion (Sweeney & Sweeney, 2010).

The increasing prevalence of Asperger's Disorder may create significant challenges for colleges and universities unprepared for a growing population of students who have normal or superior intellectual ability, but present with severely impaired social and cognitive skills. This dichotomy underscores the need for a pervasive system of support within higher education: a holistic support system that provides for academic, social and communication, and independent living supports.

Statement of the Problem

Educational research and literature document well the reasonable supports provided to at-risk students with more traditional physical or learning disorders (Abbot & Heslop, 2009; Hadley, 2006; Johnson, Zascavage, & Gerber, 2008; Lipka, 2006; McCleary-Jones, V., 2007). Researchers studying autism spectrum-related issues are still attempting to understand the

significance of the population within higher education even as prevalence estimates continue to rise. The projection by VanBergeijk et al. (2008) of “between 284,000 and 486,000 individuals” (p.1359) was based on 2006 prevalence data; when factoring in the most current prevalence estimate of one child in 88 (CDC, 2012), thousands more must be added to that prediction.

There is a dearth of information regarding how best to support college students with Asperger’s Disorder (VanBergeijk, Klin, & Volkmar, 2008). Emerging research has demonstrated that effective supports must address holistic needs – academic, social and communication, and independent living skills – for college students with Asperger’s Disorder (Ellison, Clark, Cunningham, & Hansen, 2012). This research illustrated the importance of on-campus expertise, resources dedicated to the disorder, and the sharing of information across campus to ensure efficacy of services.

It is unknown, however, how prepared the United States system of higher education is to meet the intensive and non-traditional needs of college students diagnosed with Asperger’s Disorder. This quantitative study surveyed staff at four-year public institutions to assess the readiness of higher education to support college students diagnosed with Asperger’s Disorder. Survey items were based on the *Benchmarks of Effective Supports for College Students with Asperger’s Disorder*, a checklist created by Ellison et al. (2012) that documented expert-based opinion on the types of support that college students with Asperger’s Disorder require to meet academic, social and communication, and independent living skill needs. Specifically, research questions were:

1. What is the current state of readiness within higher education to meet the academic needs of college students with Asperger’s Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger’s Disorder*?

2. What is the current state of readiness within higher education to meet the social and communication needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?
3. What is the current state of readiness within higher education to meet the independent living needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

CHAPTER 2: REVIEW OF LITERATURE

Nontraditional Students in Higher Education

A Historical Perspective

A historical resistance to change within the system of higher education has been noted during the past several generations. Wechsler (1981/2007) reported an institutionalized fear among college administrators that non-traditional students would drive the traditional student population from campus. The author suggested administrators and traditional students alike were distressed during enrollment surges of women, racial, ethnic, and religious minorities, and students who were poor. Wechsler (1981/2007) wrote:

The arrival of a new constituency on a college campus has rarely been an occasion for unmitigated joy. Perhaps such students brought with them much needed tuition dollars. In that case, their presence was accepted and tolerated. Yet higher-education officials, and often students from traditional constituencies, usually perceived the arrival of new groups not as a time for rejoicing, but as a problem: a threat to an institution's stated and unstated missions (official fear) or to its social life (student fear). (p.442)

According to Madaus (2011), on-campus distress over the instruction and support of college students with physical or cognitive disabilities has been experienced for half a century. Although legislated civil rights laws, such as the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, improved the access to college for students with disabilities the laws initially heightened concerns among college administrators unsure if their institutions could meet the financial demands necessary to support this student population (Madaus, 2011). Higher education appears to have overcome that initial financial concern, and

has generally been able to meet the basic needs of students with disability. Madaus suggested, however, that issues relevant to disability support services will continue to be scrutinized due to the significant growth in this population and the broadening range of disability types found on campus.

Madaus (2011) reported that in 1973 less than three percent of all college students in the United States disclosed a disability. In 2008, 11% of undergraduates reported a disability. The author noted changes, however, in the types of disabilities disclosed by students. “Visual impairment” was the most common disorder in higher education in 1988, and “learning disabilities” took over the top position for several years beginning in 2008. Students with “psychological/psychiatric disorders” are currently the number one group of disabled students enrolled in college. Disability support departments have been forced to grow significantly in scope and practice to meet the need of this burgeoning non-traditional population. According to Madaus, 89 % of all college disability support offices were created after the passage of the Vocational Rehabilitation Act in 1973.

A backlash within higher education occurred during the 1990s over the delivery of reasonable accommodations and the need to identify major life areas for which support is required by students with cognitive disorders (Madaus, 2011). The author explained the reaction resulted in a more restricted interpretation of the ADA. Madaus predicted higher education will be further challenged by several emerging issues related to college students with cognitive disorders. Madaus predicted new student populations likely to frustrate institutions of higher learning included military veterans who have experienced psychological trauma or brain injury, students with intellectual disabilities, and students with autism spectrum disorders.

The On-Campus Experience of Students with Asperger's Disorder

Farrell (2004) wrote that students with Asperger's Disorder and other autism spectrum disorders confound college faculty and staff largely because Asperger's Disorder was widely unknown in this country until 1994. According to Farrell, the individual strengths and needs of those diagnosed with the disorder are highly inconsistent, which creates difficulty in recognizing and understanding the disorder. To illustrate this extreme range in ability Farrell introduced readers to Stephen M. Shore.

Diagnosed with an ASD as a child, Shore was admitted to the University of Massachusetts at Amherst as an undergraduate honors student double majoring in music and accounting. After he obtained books to begin a research assignment for his Physics of Music course, Shore realized he could not proceed. The syllabus provided no deadlines for the assignment and only vague instruction. Shore told Farrell, "I didn't know what to do with the materials I found" (p.A35). Shore dropped the course, and explained years later: "It didn't even occur to me to go to the professor and ask him for help," (Farrell, 2004, p.A35). Farrell opined that students with ASD do not fit the traditional profile of college students who require services from disabled student services programs. As a result, staff does not regularly recognize the intense and on-going efforts necessary to support them. Farrell (2004) asked this question:

The difficulties faced by Asperger's students reveal a larger question that colleges must cope with: When determining accommodations for students with special needs, how much is too much? If students struggle to accomplish even basic tasks for themselves, is the college responsible for unlimited hand-holding and lessons in common sense? (p.A36)

Institutional Barriers

Despite the intended design of the ADA to protect college students with disability from discrimination, the legislation provides only broad instructions about the delivery of support services (Dillon, 2007; Hughes, 2009). Hughes (2009) reported that terms integral to the federal Act – such as “reasonable accommodations” – are not defined, permitting disability support professionals great latitude in how they interpret their services and their responsibility.

VanBergeijk et al. (2008) noted the vague instruction of the Act, and pointed out that institutions of higher education are given only broad instruction to “provide academic modifications for students with disabilities” (p.1362). According to Hughes (2009), the most common accommodations are designed to address academic needs, including additional time for testing, alternate testing locations, and tutoring.

Jordan (2001) suggested the culture of higher education must be improved to best support the needs of individual with disabilities. The former president of Gallaudet University called for higher education to transform employment practices by hiring more employees with disabilities, and to prioritize the support and education of students with disabilities. Hughes (2009) agreed, and commented on the manner in which higher education supports students with Asperger’s Disorder: “Much more can and should be done” (p.21) to meet the holistic needs of this student population.

Ellison, Clark, Cunningham, and Hansen (2012) identified multiple areas in which disability services in higher education fail to meet the needs of college students with Asperger’s Disorder. In addition, the investigators identified multiple reasons the traditional delivery of these services are generally ineffective in supporting this student population. Indeed, evidence showed the needs of college students with Asperger’s Disorder extend well beyond the traditional scope of

practice for college disability services programs (Dillon, 2007; Ellison et al., 2012; Hughes, 2009). Students with this disorder typically require specialized assistance to support living in on-campus housing, to develop social networks among peers, to develop self-advocacy skills and communicate effectively with faculty, and to learn independent living skills. Expert opinion (Dillon, 2007; Smith, 2007; Hughes, 2009) and emerging research (Ellison et al., 2012) suggested holistic services are necessary to effectively meet the academic, non-academic, and independent living needs of college students diagnosed with Asperger's Disorder.

Issues Related to Academic Needs

Research on the topic of supporting primary and secondary school students diagnosed with Asperger's Disorder highlighted the need for specialized classroom instruction (Donaldson & Zager, 2010; Simpson et al., 2010). College faculty, however, may be unaware of these instructional techniques or unsure how use of the techniques may affect the integrity of the curriculum (Farrell, 2004). Smith (2007) suggested the most effective accommodations occur when instructors understand the core symptoms of the disorder and recognize that severity of symptoms vary per individual.

Dillon (2007) emphasized the importance of creating academic supports to meet the individualized needs of each student. The professor of special education suggested technology currently exists to support the academic needs of students with the disorder. According to Dillon, the use of common tools such as Google Calendars and alarms on cell phones are simple but effective strategies to support students who experience the executive functioning challenges common to Asperger's Disorder. Hughes (2009) reported modifications to instructional style can serve as a highly effective accommodation and provided several specific recommendations.

One of those recommendations was to provide clear, detailed instructions, along with specific deadlines, to students with each assignment.

Hughes (2009) also recommended that instructors provide a summary of key lecture points at the beginning and conclusion of each class and share PowerPoint slides with identified students. The author suggested instructors ensure visual learning opportunities exist in each lecture and be available to help students break assignments down into manageable portions. In order to overcome the motor challenges often symptomatic of Asperger's Disorder, Hughes recommended professors allow students to use computers for note-taking and exams. Finally, Hughes suggested instructors employ the use of peer mentors who can help clarify assignments and provide answers to other questions. Repetition appears integral to effective teaching, and using a student's perseverative interest (an obsessive-like interest symptomatic of Asperger's Disorder) as a subject of discussion and study is often a useful strategy for inspiring participation (Wenzel & Rowley, 2010),

Jane Thierfeld-Brown, an administrator of student services at the University of Connecticut's law school encouraged the use of creative academic accommodations, but cautioned that "You always want to maintain the integrity of the curriculum" (Farrell, 2004, p.A35). Smith (2007) posited, however, that designing creative accommodations to meet the needs of this student population is essential. According to Smith, higher education attempts to support the academic needs of students with Asperger's Disorder by using accommodations designed for other disabilities. The researcher stated that new accommodations must be developed to meet this burgeoning student population.

Issues Related to Non-Academic Needs

Tradition appears to be a prominent reason typical disability services in higher education fail in supporting this student population. Ellison et al. (2012) found that disability service departments maintain an historical focus on meeting the academic needs of college students with disability and, as a result, do not typically recognize the need to provide support outside the classroom. The investigators reported, however, the greatest barriers faced by college students with Asperger's Disorder are those that occur outside the classroom. Non-academic challenges related to social skills, communication, and difficulties with cognitive organization were identified by investigators as primary barriers to an effective college education.

Meeting the holistic support needs common to college students with Asperger's Disorder requires dedicated resources, including on-site professional staff with expertise in autism spectrum disorders (Ellison et al., 2012). Hermes (2008) predicted, however, that increasing the scope of disability services within the current institutional system would strain resources. Hermes discussed the fear that administrators have regarding the inability to meet growing demands of students diagnosed with a disability. The author quoted Ada Meloy, general counsel for the American Council on Education, on the topic of broadening the definition of disability services: "There is a concern that having too many more students coming forward looking for accommodations would cause the resources of the disability offices to be extremely stretched" (p.A23).

Indeed, the characteristics of Asperger's Disorder often require intensive supports that consume significant resources. Larry Doperak, a disability services administrator at the Community College of Allegheny County, illustrated the affect these supports have on his department: "Until they learn how to ride the bike in higher education, you're with them" (Weigand, 2011, p.B7). Doperak reported he is responsible for supporting 400 students with

various disabilities, including 19 diagnosed with Asperger's Disorder. Despite making up less than five percent of the disabled student population at the school, Doperak reported that students diagnosed with Asperger's Disorder take up about 20% of his work time.

A developmental milestone termed "Theory of Mind" plays a significant role in the need for intensive supports outside the classroom for students with Asperger's Disorder. According to Colle, Baron-Cohen, and Hill (2006) the development of a theory of mind allows humans to predict the behavior of others; it is a skill necessary for social communication and understanding, and helps one recognize and understand that others have thoughts, feelings, and beliefs different than one's own. According to the researchers, verbal children with Asperger's Disorder may have an under-developed theory of mind compared to typically developing individuals. A poorly defined theory of mind may create significant difficulties involving social interaction, and particularly affect an individual's ability to demonstrate joint attention. The social interest in sharing observations and events with other people, joint attention skills ultimately form the ability to connect emotionally with others, develop friendships, and maintain long-term relationships (Sweeney & Sweeny, 2010).

Despite the pervasive social and communication challenges symptomatic of Asperger's Disorder, some experts within higher education maintain a place exists in college for students with significant disabilities. Jordan (2001) opined that colleges should work harder to meet the non-academic needs of college students with disability. The administrator suggested higher education must improve efforts to provide internship opportunities to this student population, and that college career centers should be encouraged to develop workplace transition experiences for graduating seniors with disabilities. Jordan also discussed the need to partner with primary and

secondary school systems to develop transition programs to provide support for incoming freshmen diagnosed with a disability.

Hughes (2009) detailed specific non-academic challenges experienced by college students with Asperger's Disorder. The professor explained that social interaction within housing environments can pose a significant challenge, and sensory problems can make many areas of a college campus – especially environments that are loud, or too brightly lighted – painful or overwhelming. Hughes recommended residence life staff provide students with the disorder an early schedule of activities for Week 1 of each semester so those students know what to expect. Also, Hughes recommended support be provided to help students in this population find an alternative place to eat meals, such as smaller, quieter residence hall cafeterias, to avoid exacerbating their sensory difficulties.

Dillon (2007) described the need to assess the depth to which non-academic services will be provided. The professor stated that supports designed to encourage appropriate social behavior is vital. Dillon suggested this is best accomplished through skill building activities in group settings, with groups comprised of students diagnosed with Asperger's Disorder and facilitated by a trained professional. Dillon reported the use of a mentor is an effective technique for supporting students in this population who are, as a symptom of their condition, challenged with developing friendships. According to the Dillon, however, the development of a new type of support program for students with Asperger's Disorder isn't necessary; rather, adding flexibility and expertise to the traditional model would be sufficient.

Issues Related to Independent Living Needs

Independent living skills, along with social deficits, have been identified by experts to pose a significant challenge to a successful college experience for students with Asperger's Disorder

(Ellison et al., 2012). The navigation of the complex social setting that is a college campus can be daunting for any student, and most students diagnosed with the disorder will likely be overwhelmed by the experience (VanBergeijk et al., 2008). To be successful in this new environment, Wolf, Brown, and Bork (2009) discussed the importance of a planned transition into college, with focus on developing abilities for social networking, personal flexibility, structuring of free time, and recognizing the need for – and developing the skills to carry out – self-advocacy needs.

“Jack,” a graduate student diagnosed with Asperger’s Disorder, reported his personal struggle with the transition into a campus society. Initially admitted to an Ivy League school, Jack was quickly overwhelmed with his inability to balance all the aspects of a college lifestyle. “I was miserable,” Jack reported, “I couldn’t really figure out how to interact with people” (White, 2009). Unable to recognize or interpret the subtle messages most people express through body language or by varied voice inflection, Jack could not model the behavior of others living in his immediate environment. According to Jack, “People with Asperger’s don’t learn life skills the same way other people do. We have to learn them like we’re studying a subject in school” (White, 2009). Students with Asperger’s Disorder may benefit from intensive support services early in their college experience, and then require fewer services later after skills have improved and anxiety has reduced (Becker-Cottrill & Ellison, 2007; Farrell, 2004).

A well-informed campus community has been noted to be integral to disability support services for college students with Asperger’s Disorder (Dillon, 2007; Ellison et al., 2012; VanBergeijk et al., 2008). Specifically, a knowledgeable faculty appears vital. Brockelman, Chadsey, and Loeb (2006) investigated faculty perceptions of students with disability. According to the researchers, faculty who responded to the survey reported they had inadequate knowledge

and training about providing instruction to students with severe psychological disorders. Although professors were generally positive in their comments about students with psychological disabilities, results indicated many felt uncomfortable interacting with disabled students outside the structure of the classroom. Dillon (2007) discussed the importance of assisting students in making periodic contact with faculty, and emphasized the need to teach students the skills that help them establish and maintain relationships with faculty may provide for a more effective instructional experience. The professor added that regular face-to-face contact between faculty and student provides an opportunity to identify and address academic challenges in a progressive manner.

VanBergeijk et al. (2008) advised the social and emotional well-being of college students with Asperger's Disorder must be carefully considered when designing non-academic supports. Depression and anxiety are likely to occur as co-morbid disorders in approximately 65% of adults diagnosed with Asperger's Disorder, whereas Tourette's syndrome, Obsessive Compulsive Disorder, and Bi-Polar Disorder are commonly co-morbid with the condition (VanBergeijk et al., 2008). The researchers suggested on-campus psychotherapy may be ineffective if the development of insight is the goal of the talk therapy. Rather, the experts recommended a directive, psychoeducational approach designed to teach and build skills. Further, VanBergeijk et al. recommend that residence life professionals be made aware of students diagnosed with Asperger's Disorder who live in residence halls, and that resources such as peer mentors or life coaches be available to provide advice to members of this student population.

CHAPTER 3: RESEARCH METHODS

Evidence suggested the population of college students with Asperger's Disorder in the United States is growing (Centers for Disease Control and Prevention [CDC], 2012; VanBergeijk, Klin, & Volkmar, 2008). Evidence also suggested that an increasing on-campus presence of students diagnosed with this disorder creates significant difficulties for institutions unprepared for students with normal or superior intellectual ability but severely impaired social and cognitive skills (Becker-Cottrill & Ellison, 2007; Dillon, 2007; Ellison, Clark, Cunningham, & Hansen, 2012; Farrell, 2004; Hughes, 2009; Madaus, 2011; Wing, 2005).

A 2012 Delphi survey completed by Ellison et al. demonstrated consensus among experts in regard to best practice methods of on-campus supports for college students diagnosed with Asperger's Disorder. The current preparedness of higher education to carry out those supports, however, is unknown. This quantitative research study describes the current readiness of a sample of institutions of higher education in the United States to provide the academic, social and communication, and independent living skill supports identified by experts as integral for the effective support of college students with Asperger's Disorder. The approval letter from the Institutional Review Board that sanctioned this research is included as Appendix G.

Research Design

Survey research methods (Fink, 2003) were employed to collect data from an identified population employed by four-year, public institutions of higher education in the United States. Research questions were designed to explore the readiness of disability services staff at these institutions to carry out strategies from the *Benchmarks of Effective Supports for College Students with Asperger's Disorder* (Ellison et al., 2012), which details specific services and resources identified by experts as being most integral to supporting an effective college

experience for students diagnosed with Asperger's Disorder. Multiple areas of support deemed necessary for living most effectively in a college campus community were investigated, including academic, social and communication, and independent living supports.

Population and Sample

Disability services administrators at four-year public institutions were surveyed to investigate the current readiness of higher education in the United States to provide best-practice supports to college students with Asperger's Disorder. Staff who regularly design, implement, provide, or arrange the supports for college students diagnosed with a physical, psychological, or cognitive disability were identified and invited to participate. Significant focus was placed on the academic, social and communication, and independent living experiences of the college experience; disability services administrators at community colleges, therefore, were not included in this survey because most two year institutions do not have a resident life option.

Purposive sampling (Fink, 2003) was used to select the population. An initial Internet search consisting of state-by-state queries and a search of web sites dedicated to higher education governing systems identified 582 four-year public institutions. Electronic contact information for disability service programs at each of those institutions was collected: personal email addresses were found for 563 administrators, while the general "department contact" email commonly found on school web sites served as the designated address for those remaining. Email addresses for each participant were organized into a blind copy group used to deliver the survey instrument and the consent letter. Four institutions were removed from the initial population due to repeated difficulties in delivering the electronic survey. A total of 578

degree-granting, public 4-year institutions in the United States comprised the population of the study (N=578).

Two hundred thirty-three individuals responded to the survey request, and 230 individuals (n=230), representing 39.7% of the identified population, agreed to participate. Data provided from this sample were entered into IBM SPSS Statistics Version 20 data analysis software. The software system identified systems-missing data that resulted from survey items being skipped by participants. Systems-missing data was omitted by the software. As a result, 196 (n=196) responses, representing 85.2% of the survey participants, were evaluated for this study.

Instrumentation

Survey items were based on the *Benchmarks of Effective Supports for College Students with Asperger's Disorder* (Appendix A), a checklist resulting from a 2012 Delphi survey completed by Ellison, Clark, Cunningham, and Hansen. The survey instrument (Appendix B) was comprised of three categories and a total of 18 support-related items designed to assess the presence of on-campus resources integral to supporting college students diagnosed with Asperger's Disorder. The category *Campus Living Supports* assessed needs related to independent living needs, while *Academic Supports* assessed educational and in-class needs. *Non-Academic Supports*, the third category, assessed social- and communication-related needs. Participants were also asked to report the Carnegie classification of their institution.

Data Collection

An informed consent letter (Appendix C) and a link to the electronic survey were delivered to participants via email (Appendices D, E, and F) in three rounds, on November 14, 2012, November 29, 2012, and December 10, 2012. The informed consent letter detailed the survey process, provided instruction regarding risks and benefits, and explained that participation is designed to keep the

identity of the participant anonymous. The consent letter also instructed participants on how to leave the study if desired, gave contact information for the principal investigator, and explained the study as part of a dissertation project for the co-investigator.

The survey instrument was accessed through Survey Monkey and designed to provide anonymity to participants. Participants were instructed to provide no identifying information about themselves or their institution on the survey form. A master list of participants and their contact information is currently maintained – and will continue to be, for a period of three years past the conclusion of this study – in a locked file cabinet of the co-investigator.

Data Analysis

Data collected from participants were analyzed in order to answer the research questions relating to academic, social and communication, and independent living supports. Participants chose one of four possible answers to the service-related survey items which were then transformed into a Likert Scale with the following values: 1 = the service or resource did not exist on campus; 2 = the service or resource existed only within the system of traditional disability supports; 3 = a portion of the service or resource was dedicated to students with Asperger's Disorder; and 4 = the service or resource dedicated to students with Asperger's Disorder existed fully on campus.

Descriptive frequencies, mean scores, mode scores, and standard deviations were calculated by the IBM SPSS Statistics Version 20 data analysis software. A One-Way Analysis of Variance test (ANOVA) was performed to determine significance of survey items among types of institutions (Salkind, 2011). A bivariate correlation was also performed to explore linear relationships between types of institutions and the services provided. For both tests, significance was set at $p < .05$.

CHAPTER 4: PRESENTATION AND ANALYSIS OF DATA

This study proposed to describe the current readiness of higher education in the United States to effectively provide the on-campus supports integral to the college education of students diagnosed with Asperger's Disorder. Findings are organized accordingly: (a) data collection, (b) participant characteristics, (c) major findings, (d) ancillary findings, and (e) a summary of the findings.

Data Collection

Disability service professionals at 578 degree-granting, four-year public institutions of higher education were invited to participate in a study, approved by Marshall University's Institutional Review Board (IRB), to determine their current readiness to support the academic, social and communication, and independent living needs of college students diagnosed with Asperger's Disorder. Disability service professionals were sent an informed consent letter (Appendix C), a copy of the IRB-approval letter (Appendix G), a link to the electronic survey, and survey instructions via email on November 14, 2012, November 29, 2012, and December 10, 2012 (Appendices D, E, & F). Forty percent of the surveyed population (n=230), agreed to participate.

Participants chose one of four possible answers to the service-related survey items which were then transformed into a Likert Scale. The scale consisted of: 1 = the service or resource does not exist on campus; 2 = the service or resource exists, but is available only within the traditional structure of disability services; 3 = a portion of the service or resource is dedicated to students with Asperger's Disorder; and 4 = the service or resource dedicated to students with Asperger's Disorder exists fully on campus.

Participant Characteristics

Participants (n=230) were disability services professionals at four-year public institutions who, by nature of their employment, regularly designed, implemented, provided, or arranged the supports for college students diagnosed with a physical, psychological, or cognitive disability.

One hundred eighty-two (n=182, 79.1% of those who agreed to be surveyed) participants responded to the survey item asking for the Carnegie classification of the institution. “Doctoral-granting university” was identified as the Carnegie classification by 89 respondents (48.9%), while 57 respondents (31.3%) identified their classification as “master’s level college and university.” Thirty-five respondents (19.2%) answered “baccalaureate college or university.” One respondent, who comprised 0.5% of the responding population, identified his or her institution as “tribal.” These data are displayed in Table 1.

Table 1
Demographic Characteristics of Survey Participants

Carnegie classification of surveyed institutions	Frequency	Valid Percent
Doctoral-granting university	89	48.9
Master’s college and university	57	31.3
Baccalaureate college and university	35	19.2
Tribal	1	.5
n	182	100.0
* The reported population (n=182) is less than the surveyed population (N=230) because participants were able to skip survey items		

Major Findings

Major findings from this study are presented within the framework of the research questions proposed in the first chapter of this study. Those questions explore the academic, social and communication, and independent living needs of college students diagnosed with Asperger's Disorder. Findings for each of the three areas of support are discussed according to (a) their systemic presence on-campus, and (b) the dedication of staff and other resources to carry out the service. Tables summarizing the data appear after each narrative description.

RQ1: What is the current state of readiness within higher education to meet the academic needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

Research indicated specialized classroom instruction may be the most effective way through which to educate students diagnosed with Asperger's Disorder (Donaldson & Zager, 2010; Simpson, Gaus, Biggs, & Williams, 2010). Smith (2007) emphasized that educators' knowledge about the disorder plays an integral role in the development of effective accommodations, while Dillon (2007) stressed the importance of creating academic supports to meet the individualized needs of each student.

To ensure this research explored both the systemic and individualized service needs vital to effective education of this student population, "academic needs" were divided on the survey instrument into two areas of focus. Several items explored specific institutional systems known to best support the academic needs of students diagnosed with Asperger's Disorder, whereas other items explored the readiness of institutions to provide dedicated staff and resources necessary to meet individualized needs of students.

Systems for Academic Support

Basic adjustments and reasonable accommodations. Participants responded unanimously that “access to basic adjustments and reasonable accommodations” existed currently in their institutions for students diagnosed with Asperger’s Disorder; 100% of those who responded to this survey item (n=191) reported this essential service is present and available to this student population. However, the majority of the respondents, (83.8%, n= 160) reported this support existed only within the traditional disability service programs offered to all college students with disability. Representatives from three institutions (1.6%) reported “some portion” of a system to provide basic adjustment and accommodations was dedicated to students with Asperger’s Disorder, whereas 28 participants (14.7%) reported a fully dedicated system exists on campus for this student population. The mean response was 2.3, and the standard deviation was 0.71. The mode was 2.0, indicating most respondents reported that access to basic academic accommodations for students with Asperger’s Disorder occurs through traditional disability service programs.

Self-advocacy and disclosure skills. One hundred ninety-one participants (n=191, 97%) responded to the survey item exploring the presence of “existing systems dedicated to teaching self-advocacy and disclosure skills necessary for positive academic outcomes.” The response “[S]upports do not exist in any form on campus” was selected by representatives from 14 institutions (7.3%), whereas 143 respondents (74.9%) reported this systemic support existed only within the structure of traditional disability services. Nineteen respondents (n=19, 9.9%) described “some portion” of this system existed and was dedicated to students with Asperger’s Disorder, while 15 institutions (7.9%) reported an on-campus system fully dedicated to teaching self-advocacy and disclosure skills to students with this disorder. The mean response to this item

was 2.18, and the standard deviation was 0.67. The mode was 2.0, indicating most reported that systems designed to teach self-advocacy and disclosure skills take place through traditional disability service programs.

Specialized assistance to faculty and staff. Responding to an item exploring the existence of “specialized assistance to instructors, staff, and other college personnel to aid or improve academic outcomes,” 25 institutions (13%) of participants (n=191) reported no such system existed on their campus. The majority of participants (71.2%, n=136) reported that specialized assistance to faculty and staff occurred only within the structure of traditional disability services. Sixteen respondents (n=16, 8.4%) declared “some portion” of systemic supports was dedicated to students with Asperger’s Disorder, whereas 14 participants (7.3%) reported existing systems were available on campus to provide specialized assistance to college personnel. The mean response was 2.09, with a standard deviation of 0.70. The mode was 2.0, indicating that most respondents reported systems designed to provide assistance and support to college faculty and staff about students with Asperger’s Disorder comes from traditional disability service programs. These data are illustrated in Table 2.

Table 2

Descriptive Statistics Related to Academic Supports: On-Campus Systems of Support

Current state of readiness to meet the academic needs of students with Asperger’s Disorder with support systems	<i>Supports do not exist</i>	<i>Supports only through disability services</i>	<i>Some dedicated supports</i>	<i>Fully dedicated supports</i>
Academic Benchmark	Frequency	Frequency	Frequency	Frequency
<i>Access to basic adjustments and reasonable accommodations necessary for success in the classroom</i> n = 191 Mean: 2.3089 Mode: 2.0 Standard Deviation: .71368	0	160	3	28
<i>Existing systems dedicated to teaching self-advocacy and disclosure skills necessary for positive academic outcomes</i> n = 191 Mean: 2.1832 Mode: 2.00 Standard Deviation: .67507	14	143	19	16
<i>Existing systems that provide specialized assistance to instructors, staff, and other college personnel to aid or improve academic outcomes</i> n = 191 Mean: 2.0995 Mode: 2.0 Standard Deviation: .70752	25	136	16	14
* Population listed individually because participants were able to skip distinct survey items				

Dedicated Resources for Academic Support

Professionals to inform, support, and assist faculty. Participants (n=191) reported the majority of professional staff dedicated to supporting the academic success of college students with Asperger’s Disorder is employed within programs that provide traditional disability service. Responding to the item that explored the availability of staff, “to provide information, support, and assistance to faculty and academic staff,” 75.4% (n=144) reported that staff existed only within the structure of traditional disability services. Representatives from five institutions

(2.6%) reported no identified staff existed on campus to provide this service. Eighteen respondents (n=18, 9.4%) described “some portion” of support being dedicated to students with Asperger’s Disorder, whereas representatives from 24 institutions (12.6%) reported the employment of staff identified and dedicated to this student population. The mean response was 2.31, and the standard deviation was 0.72. The mode response was 2.0, which indicates respondents reported faculty and staff assistance in regard to students with Asperger’s Disorder comes most commonly from traditional disability service programs.

Professionals to assist with academic organization and mentoring. Asked to report on the availability of staff to, “provide assistance with academic organization, guidance, and mentoring,” 15 respondents (7.9%) out of the population of those who answered the item (n=190) reported no identified staff existed on campus to provide this specific service. The majority of participants (n=138, 72.6%) reported this academic service existed only within the structure of traditional disability supports. Twenty three respondents (n=23, 12.1%) described “some portion” of this service as being dedicated to students with Asperger’s Disorder, whereas representatives from 14 institutions (7.4%), reported dedicated, identified staff exists on campus to mentor students with Asperger’s Disorder in academic organization needs. The mean response was 2.18, and the standard deviation was 0.67. A mode response of 2.0 indicates respondents report that staff availability to assist with academic organization comes from traditional disability service programs. These data are illustrated in Table 3.

Table 3

Descriptive Statistics Related to Academic Supports: Staff Dedicated to Academic Support Needs

Current state of readiness to meet the academic needs of students with Asperger’s Disorder with support staff	<i>Supports do not exist</i>	Supports only through disability services	<i>Some dedicated supports</i>	<i>Fully dedicated supports</i>
Academic Benchmark	Frequency	Frequency	Frequency	Frequency
<i>Professionals available to provide information, support, and assistance to faculty and academic staff</i> n = 191 Mean: 2.3194 Mode: 2.0 Standard Deviation: .72373	5	144	18	24
<i>Professional or paraprofessional staff available to provide assistance with academic organization, guidance, and mentoring</i> n = 190 Mean: 2.1895 Mode: 2.0 Standard Deviation: .67196	15	138	23	14
* Population listed individually because participants were able to skip individual survey items				

RQ2: What is the current state of readiness within higher education to meet the social and communication needs of college students with Asperger’s Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger’s Disorder*?

Wing (2005) reported that underdeveloped social and communication skills commonly observed in students with Asperger’s Disorder create challenges to an effective educational experience. Ellison, Clark, Cunningham, and Hansen (2012) described social and communication difficulties as one of the most significant challenges faced by college students diagnosed with the disorder. To assess the ability of institutions of higher education to support the social and communication needs of this population, participants were surveyed in regard to existing systems

and dedicated staff available to support the social and communication needs of students with Asperger's Disorder.

Systems for Social and Communication Support

Assisting students with social networking. One hundred ninety-three participants (n=193) responded to the survey item that explored systems designed to assist students in developing social networks. Representatives from 29 institutions (15%) reported no on-campus systems existed to assist this student population in this effort. A majority of those surveyed (60.6%, n=117) described this support as being available only within the structure of traditional disability services. Twenty-five respondents (n=25, 13.0%) reported "some portion" of systemic efforts were dedicated to students with Asperger's Disorder, whereas 22 institutions (11.4%) reported fully dedicated, identified staff exist on campus to assist in the development of on-campus social networks. The mean response was 2.20, with a standard deviation of 0.83. The mode response was 2.0, which indicates most respondents reported that systems to assist students with Asperger's Disorder to develop social networks come from traditional disability service programs. A significant difference ($p=0.04$) among the means of institutions reporting on the availability of staff to assist in the development of on-campus social networks was determined by a One-Way ANOVA analysis. Details of that finding are discussed in "Ancillary Findings."

Facilitating social learning and skill development. More than one-quarter (26%, n=51) of those who responded to the survey item on systems designed to, "facilitate social learning and skill development" for students with Asperger's Disorder, reported no such system on their campus. More than one-half (54.1%, n=106) reported a system of support existed only within the traditional structure of disability services. Twenty-two respondents (n=22, 11.2%) described "some portion" of this system as being in place, while 17 participants (8.7%) reported a fully

dedicated system in place to support the development of social learning and communication skills for this student population. The mean response was 2.02, with a standard deviation of 0.84. The mode response was 2.0, which indicates most respondents reported the facilitation of social learning and skill development services for students with Asperger's Disorder is carried out through traditional disability services programs.

Mentoring self-advocacy. Nearly 17% of those responding to the item that explored the availability of, “mentoring services that assist students in recognizing a need for self-advocacy, and to support skill development for carrying out the activity,” (16.8%, n=33) reported no on-campus system of service was available to meet this need. More than one-half of the respondents (63.3%, n=124) described this system as existing only within the structure of traditional disability services. Twenty-three participants (n=23, 11.7%) reported “some portion” of systemic supports were dedicated to mentoring this student population, whereas 16 institutions (8.2%) reported a fully dedicated on-campus system for mentoring self-advocacy skills. The mean response was 2.11, with a standard deviation of 0.77. The mode response was 2.0, which indicates most respondent identified traditional disability services programs as the primary source of mentoring for students with Asperger's Disorder who desire to learn more effective self-advocacy skills. These data are illustrated in Table 4.

Table 4

Descriptive Statistics Related to Social and Communication Supports: On-Campus Systems of Support

Current state of readiness within higher education to meet the social and communication needs of students with Asperger’s Disorder with support systems	<i>Supports do not exist</i>	<i>Supports only through disability services</i>	<i>Some dedicated supports</i>	<i>Fully dedicated supports</i>
Social and Communication Benchmark	Frequency	Frequency	Frequency	Frequency
<i>Professionals or paraprofessionals who assist with the development of on-campus social networks</i> n = 193 Mean: 2.2073 Mode: 2.0 Standard Deviation: .83451	29	117	25	22
<i>Professionals or paraprofessionals who facilitate social learning and skill development</i> n = 196 Mean: 2.0255 Mode: 2.0 Standard Deviation: .84995	51	106	22	17
<i>Mentoring services that assist students in recognizing a need for self-advocacy, and to support skill development for carrying out the activity</i> n = 196 Mean: 2.1122 Mode: 2.0 Standard Deviation: .77635	33	124	23	16
* Population listed individually because participants were able to skip individual survey items				

Dedicated Resources for Social and Communication Support

Professionals to teach social networking skills. Survey participants (n=187) suggested the availability of dedicated staff to teach social networking skills is limited: 60 institutions (32.1%) reported that no identified staff exist to assist this need, and 91 participants (48.7%) reported staff are available only through traditional disability support programs. Twenty-one respondents (n=21, 11.2%) described “some portion” of staff availability as being dedicated to teaching this skill to students with Asperger’s Disorder, whereas 15 institutions (8.0%) reported the existence

of fully dedicated staff. The mean response was 1.95, with a standard deviation of 0.86. The mode response was 2.0, which indicates most respondents report this service is most commonly provided through traditional disability service programs.

Professionals to teach social and communication skills. Nearly one-third (32.1%, n=60) of those responding to the item that explored the availability of staff to “teach, and mentor the development of, social and communication skills,” (n=187) reported no identified staff existed to meet this need. Ninety-three participants (n=93, 49.7%) reported this support existed only within the structure of traditional disability services. Ten percent of those who responded to this item (10.2%, n=19) described “some portion” of staff availability as being dedicated to teaching social and communication skills to this student population. Fifteen participants (n=15, 8.0%) reported fully dedicated, identified staff exist on campus to teach and mentor social and communication skills to college students with Asperger’s Disorder. The mean response was 1.94, with a standard deviation of 0.86. The mode response was 2.0, indicating most respondents reported this service is most commonly provided through traditional disability service programs. These data are illustrated in Table 5.

Table 5

Descriptive Statistics Related to Social and Communication Supports: Staff Dedicated to Teaching Social and Communication Skills

Current state of readiness within higher education to meet the social and communication needs of students with Asperger's Disorder with support staff	Supports do not exist	Supports exist only through disability services	Some dedicated supports	Fully dedicated supports
Social and Communication Benchmark	Frequency	Frequency	Frequency	Frequency
<i>Professional or paraprofessional staff available to teach skills necessary for social networking</i> n = 187 Mean: 1.9519 Mode: 2.0 Standard Deviation: .86933	60	91	21	15
<i>Professional or paraprofessional staff available to teach, and mentor the development of, social communication skills</i> n = 187 Mean: 1.9412 Mode: 2.0 Standard Deviation: .86246	60	93	19	15
* Population listed individually because participants were able to skip individual survey items				

RQ3: What is the current state of readiness within higher education to meet the independent living needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

Research and anecdotal information suggested that most students with Asperger's Disorder do not easily learn the day-to-day life skills necessary for living successfully within a campus community. Wolf, Brown, and Bork (2009) discussed the importance of teaching this student population how to become better organized and to develop personal flexibility. College students diagnosed with Asperger's Disorder have reported that they must be taught independent living skills in much the same way as they are taught academic lessons (White, 2009). Experts reported that difficulties related to independent living skills present significant challenges to college

students diagnosed with Asperger's Disorder (Becker & Ellison, 2007; Dillon, 2007; Ellison, Clark, Cunningham, & Hansen, 2012; VanBergeijk, Klin, & Volkmar, 2008).

Participants involved with this research project were surveyed in regard to the institutional systems designed to assist college students with Asperger's Disorder in meeting their independent living skill needs, and the availability and dedication of professional staff to teach and provide this support.

Systems for Independent Living Support

On-campus expertise. Research indicates a campus community well-informed about the disorder, combined with professional staff to provide independent living assistance and training to students, may be most beneficial to an effective college experience (Brockelman, Chadsey, & Loeb, 2006; Dillon, 2007; Ellison et al., 2012). Participants were surveyed in regard to the on-campus expertise regarding Asperger's Disorder and the supports necessary for an effective college experience at their respective institutions.

One hundred ninety-six participants (n=196) responded to this survey item. Thirteen participants (n=13, 6.6%) reported no on-campus expertise existed regarding Asperger's Disorder, whereas 76 participants (38.8%) reported some personnel have attended workshops or trainings about the disorder. Sixty-four respondents (n=64, 32.7%) described some personnel as having extensive experience with the disorder, whereas 43 participants (21.9%) reported an on-campus, identified expert on the disorder existed on campus and is available to provide information and expertise. The mean response was 2.69, with a standard deviation of 0.88. The mode response was 2.0, indicating most respondents report on-campus expertise regarding Asperger's Disorder is most commonly found in traditional disability service programs.

Dedicated finances and resources. It is logical to assume that developing and delivering specialized services to college students with Asperger’s Disorder may add additional expenses to an institution of higher education or to the disability services departments within the college. Still, research has shown that the dedication of finances and specialized resources are integral to providing best-practice supports (Ellison, Clark, Cunningham, & Hansen, 2012). Survey participants were asked to report the current readiness of their institutions in regard to the “dedicated finances and on-campus resources for supporting students with Asperger’s Disorder.” Of those who responded to this survey item (n=196), 26 (13.3%) reported no dedicated finances or on-campus resources existed for students with Asperger’s Disorder. The majority (n=141, 71.9%) reported support programming and resources existed only within the structure of traditional disability services. Twenty-four respondents (n=24, 12.2%) described “some portion” of their finances and resources were dedicated to students with Asperger’s Disorder, whereas five participants (2.6%) reported dedicated finances and resources existed fully on campus for this student population. The mean response was 2.04, with a standard deviation of 0.59. The mode response was 2.0, indicating most respondents report dedicated finances or resources designed to support college students with Asperger’s Disorder are maintained within traditional disability service programs.

Mental health access. VanBergeijk, Klin, and Volkmar (2008) emphasized the importance of on-campus mental health services to students with Asperger’s Disorder as they navigate a complicated campus community. Participants were asked to report the current readiness of their institutions to provide mental health services, including assessment and counseling, to college students with Asperger’s Disorder. Of those who

responded to this survey item (n=185), 22 participants (11.9%) reported no identified mental health professional existed on campus to provide service to this student population. More than one-half of the respondents (n=123, 66.5%) reported mental health services existed only within the structure of traditional disability services. Nineteen respondents (n=19, 10.3%) described “some portion” of their mental health services were specialized and available to this student population. Twenty-one participants (n=21, 11.4%) reported dedicated, identified mental health staff existed on campus to fully support students with Asperger’s Disorder. The mean response was 2.21, with a standard deviation of 0.79. The mode response was 2.0, indicating most respondents report mental health services for those in this student population are provided through traditional disability service programs.

Assistance with identifying resources. One hundred eight-five participants (n=185) reported on their ability to support students with Asperger’s Disorder to receive assistance with “identifying available on-campus and off-campus resources.” Ten respondents (n=10, 5.4%) reported no such system existed, whereas 143 respondents (77.3%) reported this support exists only within the structure of traditional disability services. Sixteen participants (n=16, 8.6%) described “some portion” of support services as being dedicated to students with Asperger’s Disorder, whereas 16 institutions (8.6%) reported a fully dedicated system of support exists on campus. The mean response was 2.20, with a standard deviation of 0.66. The mode response was 2.0, indicating most report that assistance with identifying necessary resources is provided by traditional disability service programs.

Mentoring an independent on-campus lifestyle. One hundred ninety-five participants (n=195) responded to the item that explored the readiness of higher education to provide “mentoring services that support organizational needs” that promote an independent, on-campus lifestyle. Of those who responded, 36 (18.5%) reported no system of mentoring existed for students diagnosed with Asperger’s Disorder. The majority (n=119, 61.0%) reported this system existed only within the structure of traditional disability services. Twenty-six participants (n=26, 13.3%) described “some portion” of their systemic support as being dedicated to students with Asperger’s Disorder, whereas 14 participants (7.2%) reported fully dedicated systems were in place on campus to meet this need. The mean response was 2.09, with a standard deviation of 0.77. The mode response was 2.0, which indicates mentoring systems to support a more independent on-campus lifestyle are carried out through traditional disability service programs. Table 6 illustrates these data.

Table 6

Descriptive Statistics Related to Independent Living Supports: On-Campus Systems of Support

Current state of readiness to meet the independent living needs of students with Asperger’s Disorder with support systems	<i>Supports do not exist</i>	<i>Supports exist only through disability services</i>	<i>Some dedicated supports</i>	<i>Fully dedicated supports</i>
Independent Living Benchmark	Frequency	Frequency	Frequency	Frequency
<p><i>On-campus expertise regarding Asperger’s Disorder and the supports necessary for an effective college experience</i> n=196 Mean: 2.6990 Mode: 2.0 Standard Deviation: .88648</p>	13	76	64	43
<p><i>Dedicated finances and on-campus resources for supporting students with ASD</i> n=196 Mean: 2.0408 Mode: 2.0 Standard Deviation: .59775</p>	26	141	24	5
<p><i>Mental health professionals trained to provide assessment, counseling, and other therapeutic services to students with Asperger’s Disorder</i> n=185 Mean: 2.2108 Mode: 2.0 Standard Deviation: .79666</p>	22	123	19	21
<p><i>Professional or paraprofessional staff available to provide assistance with identifying available on-campus and off-campus resources</i> n = 185 Mean: 2.2054 Mode: 2.0 Standard Deviation: .66836</p>	10	143	16	16
<p><i>Mentoring services that support organizational needs, such as: goal setting, meeting deadlines, chunking assignments, planning for off-campus travel, etc.</i> n = 195 Mean: 2.0923 Mode: 2.0 Standard Deviation: .77439</p>	36	119	26	14
<p>* Population listed individually because participants were able to skip individual survey items</p>				

Dedicated Resources for Independent Living Support

Professionals to assess and teach independent living skills. Research indicates that college students with Asperger's Disorder require dedicated professionals trained to "assess and teach independent living skills" in order to have an effective college experience (Ellison, Clark, Cunningham, & Hansen, 2012). Of the 196 participants who responded to a survey item that explored this strategy, one-half (n=98, 50.0%) reported no staff existed to assess areas of need or to teach independent living skills. Seventy-seven participants (n=77, 39.3%) reported staff existed only within the structure of traditional disability services. Twelve respondents (n=12, 6.1%) described "some portion" of staff time as being dedicated to students with this disorder. Nine participants (n=9, 4.6%) reported dedicated, identified staff existed on campus to provide this service. The mean response was 1.65, with a standard deviation of 0.79. The mode for this support service was 1.0, meaning most institutions who responded to the item report no such service exists on-campus at their institution.

Professionals to assist with improving independent living skills. Participants (n=186) were surveyed as to their ability to "provide assistance with learning or improving independent living skills." Eighty-three (n=83, 44.6%) reported no staff existed from whom students diagnosed with Asperger's Disorder could receive this support. Eighty-two participants (n=82, 44.1%) reported staff existed only within the structure of traditional disability services. Twelve participants (n=12, 6.5%) reported employing staff to provide "some portion" of dedicated supports to students with the disorder, whereas nine participants (4.8%) answered they had fully dedicated, on-campus staff available to assist students with Asperger's Disorder in learning or improving their independent living skills. The mean response was 1.71, with a standard deviation of 0.79.

The mode for this support service was 1.0, meaning most institutions who responded to the item report no such staff exists on-campus at their institution. These data are illustrated in Table 7.

Table 7
Descriptive Statistics Related to Independent Living Supports: *Staff Dedicated to Teaching Independent Living Skills*

Current state of readiness to meet the independent living needs of students with Asperger’s Disorder with support staff	<i>Supports do not exist</i>	<i>Supports exist only through disability services</i>	<i>Some dedicated supports</i>	<i>Fully dedicated supports</i>
Independent Living Benchmark	Frequency	Frequency	Frequency	Frequency
<i>Professionals or paraprofessionals who assess and teach independent living skills</i> n = 196 Mean: 1.6531 Mode: 1.0 Standard Deviation: .79230	98	77	12	9
<i>Professional or paraprofessional staff available to provide assistance with learning or improving independent living skills</i> n = 186 Mean: 1.7151 Mode: 1.0 Standard Deviation: .79150	83	82	12	9
* Population listed individually because participants were able to skip individual survey items				

Ancillary Findings

A One-Way ANOVA, with alpha level of 0.05, was performed to determine if significance existed within or among the means calculated for the types of institutions surveyed. Significance (p = 0.04) was found among the means of all institutions reporting on “professionals or paraprofessionals who assist students with Asperger’s Disorder with the development of on-campus social networks.” Data suggested a significant discrepancy

between groups identified as “bachelor-level,” “master’s-level,” or “doctoral-level” in relation to their readiness to support students in the development of on-campus social networks.

Survey results demonstrated 87 participants (37.8%) who responded to the item related to assisting with social network development also identified their Carnegie Classification as “doctoral-level.” Participants from 56 (n=56, 24.3%) “master’s-level” institutions, 35 (15.2%) “bachelor’s-level” institutions, and 0 (0.0%) “tribal” colleges reported both their Carnegie classifications and their current readiness to assist students in developing social networks. Twenty-seven (n=27, 11.7%) “doctoral-level” participants reported partial or fully dedicated services to assist students with Asperger’s Disorder in developing social networks. Only eight “master’s-level” participants (3.4%), five “bachelor-level” participants (2.1%), and no participants from tribal colleges (0.0%) reported having dedicated services to assist students in this population with the development of social networks. No other statistical significant was noted from the ANOVA evaluations.

A bivariate correlation was performed to explore relationships between Carnegie classifications and the types of services provided. Significance was set at 0.05 and no correlation existed between services provided to college students with Asperger’s Disorder and the type of degree-granting institution in which they were provided.

Summary of Findings

Based upon responses to a survey item that explored the Carnegie classification of each college or university, responses from a variety of institutional types (n=182) are represented in these findings. Survey participants who reported their Carnegie classifications from doctoral-

level institutions (n=89, 48.9%), master's- level institutions (n=57, 31.3%) baccalaureate colleges and universities (n=35, 19.2%), and tribal colleges (n=1, 0.5%) provided insight into their current readiness to provide systemic and individualized supports to college students diagnosed with Asperger's Disorder.

This summary of findings is presented within the framework of the research questions proposed in the first chapter of this study. Survey participants responded to items that explored the academic, social and communication, and independent living support services identified by experts (Ellison, Clark, Cunningham, & Hansen, 1012) to be integral to the effective education of college students diagnosed with Asperger's Disorder. The statistical mean, mode, and frequencies of the findings form the foundation for the summary report.

RQ1: What is the current state of readiness within higher education to meet the academic needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

Respondents reported unanimously (n=191, 100%) that access to basic adjustments and reasonable accommodations exist currently in some form within their institutions for students diagnosed with Asperger's Disorder. The majority (83.8%, n= 160), however, report this support is available only through traditional disability service programs. Indeed, on-campus disability service programs appear most commonly responsible for providing this student population with systemic services necessary to improve academic outcomes by teaching self-advocacy and disclosure skills (n= 143, 74.9%), and providing assistance to faculty and staff (n=136, 71.2%).

Traditional disability service programs also appear most commonly responsible for dedicated staff and resources necessary for individualized academic support of college students

diagnosed with Asperger's Disorder. The majority (n=144, 75.4%) reported staff dedicated to provide specialized assistance to faculty and staff about the academic needs of students with Asperger's Disorder are employed within traditional disability services programs. In addition, the majority of respondents (n=138, 72.6%) reported the academic mentoring and guidance typically necessary for this student population are delivered by staff employed within traditional disability services programs.

RQ2: What is the current state of readiness within higher education to meet the social and communication needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

Although social and communication-related difficulties present significant challenges to all students diagnosed with Asperger's Disorder (American Psychiatric Association, 2000; Becker & Ellison, 2007; Ellison, Clark, Cunningham, and Hansen, 2012; Ellison, Hansen, & Clark, 2012; Wing, 2005), there appears to be a significant lack of specialized services dedicated to this outcome within higher education. Fifteen percent of those who responded to this item (15%, n=29) reported the existence of no on-campus system designed to support this population of students in developing social networks. A One-Way ANOVA determined significance ($p=0.04$) between the mean scores related to assisting students with developing social networks, indicating this support is carried out differently between various types of institutions. More than one-quarter of the respondents (n=51, 26%) reported no on-campus system to facilitate social learning and skill development. Representatives from 33 institutions (n=33, 16.8%) reported no on-campus system existed to support students with Asperger's Disorder in recognizing the need for and developing the skills for self-advocacy. The majority of participants reported that any services that addressed social networking (60.6%, n=117), social learning (54.1%, n=106), and

general self-advocacy skill development (63.3%, n=124), are provided only through traditional disability services.

There appears to be limited dedication of staff and resources to support the social and communication needs of college students diagnosed with Asperger's Disorder. Nearly one-third of the respondents responding to social-related services (n=187) reported no identified staff existed to teach skills related to social networking (n=60, 32.1%) and social and communication needs (n=60, 32.1%). Findings suggested that if those services are provided, skill development for social networking (n=91, 48.7%) and meeting social and communication needs (n=93, 49.7%) are provided only through the office of traditional disability services programs.

RQ3: What is the current state of readiness within higher education to meet the independent living needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

Research indicated a campus community well-informed about the disorder, combined with professional staff to provide independent living assistance and training to students, may be most beneficial to an effective college experience for college students diagnosed with Asperger's Disorder (Brockelman, Chadsey, & Loeb, 2006; Dillon, 2007; Ellison et al., 2012). Participants responding to the survey item that explored on-campus expertise (n=196) reported campus-based knowledge about the disorder may be lacking: 13 participants (n=13, 6.6%) reported no on-campus expertise existed, whereas 76 participants (38.8%) reported some personnel have attended workshops or trainings about the disorder. Approximately one-third of the participants (32.7%, n=64) reported some personnel on campus had extensive experience with Asperger's Disorder. Only 21.9% of survey respondents (n=43) reported an on-campus, identified expert on the disorder existed on campus and was available to provide information and expertise.

It is logical to assume that the development and maintenance of expertise may require dedicated finances and resources. The majority of those who responded to this survey item (n=141, 71.9%), however, reported that finances and resources to support this student population existed only within the structure of traditional disability services; only a small minority (n=5, 2.6%) indicated their institutions had funds and resources dedicated to this student population. Respondents (n=185) suggested mental health services appropriate for this student population are either non-existent on campus (n=22, 11.9%), or provided only by traditional disability service professionals (n=123, 66.5%). A large majority of respondents (n=143, 77.3%) said a system to support students in identifying on- and off-campus resources existed only in traditional disability service programs or not at all (n=10, 5.4%). Only 7.2% (n=14) reported an existing system of mentoring designed to support the organizational needs of this student population. Thirty-six (n=36, 18.5%) reported no system of mentoring existed for students diagnosed with Asperger's Disorder, whereas the majority (n=119, 61.0%) reported this service existed only within the structure of traditional disability programs.

The mode response of 1.0 for items related to the availability of dedicated staff to teach independent living skills was the lowest of all items on the survey. Of those who responded to the survey item related to teaching independent living skills (n=196), one-half (n=98, 50.0%) reported no staff existed on-campus to provide these services. Nearly one-half (n=83, 44.6%) reported the absence of dedicated staff outside of general disability services to "provide assistance with learning or improving independent living skills." In both categories only nine participants (4.8%) answered their institutions had dedicated staff in place to teach these skills.

CHAPTER 5: SUMMARY, DISCUSSION OF FINDINGS, AND RECOMMENDATIONS

The purpose and methods of this study will be reviewed in Chapter 5. Also included in the chapter is a discussion of the findings and how those findings relate to current professional literature on the topic of supporting students with Asperger's Disorder in higher education.

Purpose of the Study

Despite projections that hundreds of thousands of individuals diagnosed with Asperger's Disorder will enter higher education in the United States in the near future, there is a dearth of information regarding how best to support them in that educational setting (VanBergeijk, Klin, & Volkmar, 2008). Emerging research demonstrates that effective supports must address holistic needs. Ellison, Clark, Cunningham, and Hansen (2012) created the *Benchmarks of Effective Supports for College Students with Asperger's Disorder* from expert-based opinion on the types of support that college students with Asperger's Disorder require to meet academic, non-academic, and independent living skill needs.

The preparedness of higher education to meet the intensive and non-traditional needs of college students diagnosed with this disorder is currently unknown. This quantitative study surveyed disability service professionals at public institutions in the United States to explore that issue. Research questions were:

RQ1: What is the current state of readiness within higher education to meet the academic needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

RQ2: What is the current state of readiness within higher education to meet the social and communication needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

RQ3: What is the current state of readiness within higher education to meet the independent living needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

Methods

Disability services administrators at four-year public institutions were surveyed to investigate the current readiness of higher education in the United States to provide best-practice supports to college students with Asperger's Disorder. Purposive sampling (Fink, 2003) was used to survey an anonymous population (N=578) within higher education that regularly designs, implements, provides, or arranges the supports for college students diagnosed with physical, psychological, or cognitive disabilities.

Research focus was placed on exploring the academic, social, and independent living experiences of the college lifestyle. Surveys were delivered electronically via Survey Monkey over three rounds on November 14, 2012, November 29, 2012, and December 10, 2012. The survey instrument was based on Ellison, Clark, Cunningham, and Hansen's 2012 *Benchmarks of Effective Supports for College Students with Asperger's Disorder* (Appendix A). Comprised of three categories and a total of 18 service-related items, the instrument (Appendix B) assessed the presence of on-campus resources integral to supporting college students diagnosed with Asperger's Disorder. Of the 578 contacted, 233 (n=233, 40.3%) responded to the survey request, and 230 (n=230, 39.7%) agreed to participate. Institutions from which representatives replied were categorized into "doctoral-level" (n=89, 48.8%), "master's- level" (n=57, 31.3%),

“baccalaureate college or university” (n=35, 19.2%) and “tribal college or university” (n=1, 0.05%). IBM SPSS Statistics Version 20 software was used to analyze data. After omitting systems-missing data, responses (n=196, 85%) were evaluated for this study.

Participants chose one of four possible answers to the service-related survey items. Researchers later converted each response to the following Likert Scale values: 1 = the service or resource does not exist on campus; 2 = the service or resource exists only within the system of traditional disability supports; 3 = a portion of the service or resource is dedicated to students with Asperger’s Disorder; or 4 = the service or resource is dedicated fully on-campus to students with Asperger’s Disorder. Frequencies, mean scores, mode scores, and standard deviations were calculated using the IBM SPSS Statistics Version 20 data analysis software. A One-way Analysis of Variance test (ANOVA) was performed to determine significance of survey items among types of institutions and within the population (Salkind, 2011). A bivariate correlation was performed to explore significant relationships between types of institutions and the services provided. For both tests, significance was set at $p < .05$.

Findings

RQ1: What is the current state of readiness within higher education to meet the academic needs of college students with Asperger’s Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger’s Disorder*?

Systemic Academic Supports. Survey participants reported unanimously (n=190, 100%) that “access to basic adjustments and reasonable accommodations,” afforded by Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act (1990) existed in some form within higher education for students diagnosed with Asperger’s Disorder. However, professional educators and researchers point out these legislated Acts provide only

broad instruction about the design and delivery of academic supports that must be made for students with disability (Dillon, 2007; Hughes, 2009; VanBergeijk, Klin, & Volkmar, 2008). Hughes (2009) suggested the academic accommodations commonly provided to all students with disability – such as providing additional time for testing, tutoring, note-taking, and providing alternative locations for testing – may be less integral for students with Asperger’s Disorder than the ability of faculty to adapt their pedagogy to best meet students’ social and communication needs. Ellison, Clark, Cunningham, and Hansen (2012) demonstrated disability service programs in higher education typically fail to meet the academic needs of students diagnosed with Asperger’s Disorder due to several systemic factors, including a lack of professional knowledge of the disorder and limited resources.

Only a small portion of survey participants (n=28, 14.6%) reported an on-campus system of basic academic supports fully dedicated to students with Asperger’s Disorder. An even smaller portion of the surveyed population (n=14, 7.3%) reported systems fully dedicated to providing specialized assistance to faculty and staff to aid or improve academic outcomes for this student population. According to survey results, higher education appears to rely on traditional disability service programs to provide access to basic adjustments and reasonable accommodations (n=160, 83.7%). In addition, survey data demonstrated higher education also appears to rely on traditional disability service programs to provide training opportunities for students that may positively influence academic outcomes in areas, such as “self-advocacy” and “disclosure” (n=143, 74.8%).

Dedicated Resources for Academic Support. It is known that specialized classroom instruction, based on a professional understanding of the symptoms associated with Asperger’s Disorder (Donaldson & Zager, 2010; Gibbons & Goins, 2008; Simpson, Gaus, Biggs, &

Williams, 2010) and a recognition of the individualized needs of each student (Dillon, 2007; Hughes, 2009; Smith, 2007), is the most effective way to educate students in this population. It is also known that students with Asperger's Disorder experience cognitive challenges that affect attention, organization, and the ability to plan (Sweeney & Sweeney, 2010; Wolf, Brown, & Bork, 2009). Hughes (2009) advised instruction to this student population be presented in a more visual style and that professors provide syllabi that contain specific deadlines and thorough instruction. However, Wolf, et al. (2009) and Farrell (2004) suggest college professors may be uncertain how to provide academic accommodations and adjustments without compromising the integrity of their curriculum. Ellison et al. (2012) reported that faculty and staff attitudes in regard to instructing this student population were likely to affect academic outcomes, and that dedicated personnel able to assist faculty and staff with better understanding the disorder were important.

Survey data demonstrated staff of traditional disability services programs in higher education are the primary sources of information, assistance, and support for academic staff instructing students with Asperger's Disorder (n=144, 75.3%). Eighteen participants (n=18, 9.4%) reported "some portions" of supports are dedicated to assisting academic staff who instruct students with Asperger's Disorder, while 24 participants (n=24, 12.5%) reported fully dedicated resources are in place on-campus to assist academic staff in their instruction of this student population.

Staff of traditional disability service programs also appear to be most responsible for providing direct assistance to students with Asperger's Disorder in academic organization, guidance, and mentoring (n=138, 72.6%). Twenty-three participants (n=23, 12.1%) reported "some portion" of staff time was dedicated to supporting this student population in this effort,

whereas only 14 participants (n=14, 7.3%) reported having in place fully dedicated staff to carry out this assistance to students with Asperger's Disorder.

RQ2: What is the current state of readiness within higher education to meet the social and communication needs of college students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*?

Systemic Social and Communication Supports. Asperger's Disorder is characterized by marked difficulties with social interaction, social communication, and social learning as a result of the disorder (American Psychiatric Association [APA], 2000). These social-related difficulties create significant barriers to effective education (Becker & Ellison, 2007; Farrell, 2007; Hughes, 2009; VanBergeijk, et al., 2008; Wing, 2005) and relationship-building with classmates and professors (Colle, Baron-Cohen, & Hill, 2006; Ellison et al., 2012; Sweeney & Sweeney, 2010; Wing, 2005). Research indicates college students with Asperger's Disorder may best be supported by dedicated systems designed to meet their unique needs.

The majority of those who responded to the survey item related to on-campus systems that support students with Asperger's Disorder in developing social networks (n=117, 60.6%) report this service as being available only within the traditional structure of disability services. Twenty-five participants (n=25, 12.9%) report "some portion" of services are dedicated to this student population, while only 22 participants (n=22, 11.3%) reported an on-campus, fully dedicated program of support for to assist college students with Asperger's Disorder in developing social networks.

A smaller number of respondents report their institutions provide dedicated, specialized systems that support the social and communication needs of students with Asperger's Disorder: 17 participants (8.6%) report fully dedicated systems of support to address social learning and

skill development, whereas 16 institutions (8.1%) report systems fully dedicated to helping students learn self-advocacy skills. Slightly more than 10% of those who responded reported “some portion” of their services were dedicated to facilitating social learning (n=22, 11.2%) and assisting students in learning self-advocacy skills (n=23, 11.7%).

Dedicated Resources for Social and Communication Supports. Wing (2005) reported adverse social outcomes commonly occur in educational settings for students with Asperger’s Disorder, especially for those diagnosed with milder forms of the disorder. According to the researcher, students with autism spectrum disorders in the United Kingdom who appeared “more able” (a term to suggest a higher ability to function) were more likely to experience exclusion by peers. Professionals in the field of autism services (Becker & Ellison, 2007) and researchers Ellison et al., 2012) discuss the importance of individualized training in areas of social skills and social communication in meeting the holistic educational needs of students diagnosed with the disorder.

Twenty-one participants (n=21, 11.2%) reported “some portion” of services at their respective institutions are dedicated to teaching students with Asperger’s Disorder skills necessary for social networking, whereas a minority of those surveyed (n=15, 8%) reported this service exists on-campus in a fully dedicated format. Participants from 60 institutions (n=60, 32%) reported no services existed on their campuses that were designed to teach social networking skills. The majority of participants (n=91, 48.6%), however, reported this service existed only within the delivery of traditional disability services.

Similar responses resulted when participants were asked to report on the availability of staff to teach and mentor the development of social communication skills. Participants from 60 institutions (n=60, 32%) reported this support does not exist on their campus, whereas 19

institutions (n=19, 10.1%) reported “some portion” of this service was dedicated to this student population. A small number of participants (n=15, 8%) reported the existence of fully dedicated staff to teach students with Asperger’s Disorder in the development and use of social communication skills.

RQ3: What is the current state of readiness within higher education to meet the independent living needs of college students with Asperger’s Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger’s Disorder*?

Systemic Independent Living Supports. Farrell (2004) acknowledged the significant challenges faced by staff within higher education to effectively support students with Asperger’s Disorder, and questioned how intensively colleges should be expected to provide support services. College students within this population typically require a well-informed campus community, along with specialized assistance to support their residency in campus housing and mentoring to learn basic independent living skills.

Survey participants reported in high numbers that expertise about Asperger’s Disorder existed on their respective campuses. Sixty-four participants (n=64, 32.7%) said some personnel have “extensive experience” with the disorder, while 21.9% (n=43) of those who responded to this item reported an expert in the disorder existed on campus. However, only five participants (n=5, 2.5%) said their institutions had finances and resources dedicated and available on-campus for this student population. Twenty-four participants (n=24, 12.2%) reported some staff had attended workshops on the disorder, while 13.3% (n=26) reported no existing on-campus expertise related to systems of independent living supports. The majority of participants (n=141, 71.9%) reported any existing expertise related to independent living is housed within traditional disability services.

VanBergeijk, et al. (2008) emphasized the importance of appropriate and effective on-campus mental health care to accommodating the independent living needs of this student population. The majority of participants who responded to the item (n=123, 66.4%) related to systemic mental health access reported the gateway to these services exists only within traditional disability services. Nineteen participants (n=19, 10.2%) reported “some portion” of mental health services are dedicated to this student population, while only 21 participants (11.3%) said a fully dedicated system of mental health services was dedicated to students with Asperger’s Disorder. Twenty-two participants (n=22, 11.8%) reported no such system of mental health support existed on their respective campuses.

Traditional disability services programs were identified by participants as the systems through which students with Asperger’s Disorder must access assistance with identifying on- and off-campus resources (n=143, 77.2%) and mentoring for needs related to organizing independent living needs (n=119, 61%). A small number reported systems fully dedicated to locating resources (n=16, 8.6%), and assisting with organization needs (n=14, 7.1%). Thirty-six participants (n=36, 18.4%) of those responding to the item related to assisting organizational needs reported no such systemic services existed in their respective institutions.

Dedicated Resources for Independent Living Supports. Research (Hurlbutt & Handler, 2010; Wolf, Brown, & Bork, 2009) and first-person accounts (White, 2009) suggested that students with Asperger’s Disorder must learn independent living skills through repetitive experiences and applied experience. Experts (Becker & Ellison, 2007; Dillon, 2007; VanBergeijk, et al., 2008) recommended the use of mentoring as an effective support strategy.

Participants suggested the dedication of resources to teach students with Asperger’s Disorder independent living skills within higher education were significantly lacking. Of those who

responded to the items, the majority (n=98, 50%) said no services existed on their campuses to assess and teach independent living skills to this student population. Eighty-three participants (n=83, 44.6%) reported no services existed on campus to help student improve independent living skills already learned. A small minority reported fully dedicated resources for assessing and teaching independent living skills (n=9, 4.5%) and for improving those skills (n=9, 4.8%). A mode response of 1 for each of these items, however, suggested that most participants who responded to the item reported that no such service existed on their respective campus.

Conclusions

Academic Supports. Ellison, Clark, Cunningham, and Hansen (2012) reported that traditional disability service programs within higher education do not generally meet the academic needs of students with Asperger's Disorder. According to the researchers, this ineffectiveness is most likely due to a lack of resources and a lack of professional knowledge of the disorder.

A large majority of disability service professionals who responded to the survey reported their institutions relied largely on this traditional model to develop systemic supports that address academic adjustments and basic accommodations (n=160, 100%), support students with Asperger's Disorder in meeting their self-advocacy and disclosure needs (n=143, 74.8%), and provide assistance to staff and faculty that aid academic outcomes (n=136, 71.2%). The majority of those surveyed also reported that traditional disability service programs were the primary providers of specialized assistance to faculty instructing college students with Asperger's Disorder (n=144, 75.3%) and with assisting student with needs related to academic organization (n=138, 72.6%).

Specialized, fully dedicated supports designed to meet the needs of students with Asperger's Disorder exist in the minority, according to the surveyed professionals. Data of note include the small number of institutions with fully dedicated staff who assist instructors in improving academic outcomes for students of this population (n=24, 12.5%) and assisting students with academic organization and guidance (n=14, 7.3%). Largely, results (from within a sample range of 190 to 192 for individual items) suggested the institutions of those surveyed are not adequately prepared to meet the academic needs of college students diagnosed with Asperger's Disorder as those needs are described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder* (Ellison et al., 2012).

Social and Communication Supports. Challenges related to social and communication skills are requisite characteristics of Asperger's Disorder (APA, 2000), which create difficulties as students with the disorder attempt to navigate the campus community. Ellison, Clark, Cunningham, and Hansen (2012) reported that traditional disability services do not generally meet the non-academic needs of this student population due to a lack of resources and a lack of professional knowledge about the disorder. Still, the majority of participants (n=196) reported a reliance on traditional disability support services to develop and carry out the social and communication needs of college students with Asperger's Disorder.

It is noteworthy to emphasize that more than one-quarter of those surveyed reported no specialized systems existed to facilitate social learning and skill development for students with Asperger's Disorder (n=51, 26%), and nearly one-third of the respondents reported that no resources or staff were dedicated for teaching social networking skills (n=60, 32%) and social communication skills (n=60, 32%).

Respondents largely reported that most social and communication supports are provided through traditional disability services. Results (from within a sample range of 187 and 196 for individual items) of those surveyed, therefore, suggested their institutions are not adequately prepared to meet the social and communication needs of college students diagnosed with Asperger's Disorder as those needs are described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder* (Ellison et al., 2012).

Independent Living Supports. Data related to the area of independent living may be most telling when assessing the readiness of higher education to support students with Asperger's Disorder. Ellison, Clark, Cunningham, and Hansen (2012) reported that traditional disability services does not generally meet the independent living needs of this student population due to a lack of resources and a lack of professional knowledge about the disorder. However, the majority of those surveyed (from within a sample range of 185 to 196 for individual items) reported that independent living supports are most commonly provided on their campuses by traditional disability service programs.

Research demonstrates that a campus community that is well-informed about the symptoms associated with Asperger's Disorder is highly beneficial to an effective college experience for those in this demographic (Brockelman, Chadsey, & Loeb, 2006; Dillon, 2007; Ellison et. al, 2012). More than one-half of those who responded to the survey item related to on-campus expertise (107, 54.5%) reported having staff on campus with "extensive experience" related to Asperger's Disorder. However, despite the report of high level expertise, only 2.5% of the respondents (n=5) reported having dedicated finances for supporting this student population, and only 11.3% (n=21) reported specialized, on-campus mental health services to meet the needs of this student population. Fewer than ten percent of those surveyed reported having dedicated

systems in place to help students with the disorder identify on-and off-campus resources (n=16, 8.6%), and even fewer reported having a process to mentor students with Asperger's Disorder in areas such as organizational needs like goal setting and planning for off-campus travel (n=14, 7.1%).

Fifty percent (50%, n=98) of those who responded to the item related to dedicated staff to assess and teach independent living skills to this student population reported no such service existed on campus, while 39.2% (n=77) said this service was provided through traditional disability support services. Responding to the availability of staff to "provide assistance with learning or improving independent living skills," 83 respondents (44.6%) reported no such services exist on campus, and 82 respondents (44%) reported the service was provided through traditional disability services.

There appears to be a significant lack of services to address the assessment and instruction of independent living skills; the mode response of 1 indicated that most participants reported no such service existed on their campus. Survey results (a population ranging between 185 and 196 for individual items), therefore, suggested that higher education is not adequately prepared to meet the independent living needs of college students diagnosed with Asperger's Disorder as those needs are described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder* (Ellison et al., 2012).

Summary

Given the growing number of students diagnosed with Asperger's Disorder projected to enroll in colleges and universities, the findings, although not surprising, are somewhat alarming. In a Delphi survey of experts on autism spectrum disorders and college supports, Ellison, Clark, Cunningham, and Hansen (2012) reported that services to address the social, cognitive

organization and independent living skill deficits of students with Asperger's Disorder were more integral to college success than were academic supports. In addition, the researchers found that social communication skills, such as recognizing the need for self-advocacy and disclosure and having the skills necessary to carry out those activities, were directly tied to academic success. It is noted the importance of mental health services was mentioned less prominently by experts than the need for dedicated staff with expertise, and a campus community well-informed about the disorder. However, outcomes that resulted from this research project demonstrated a minority of institutions had fully dedicated systems of supports or dedicated staff to address these areas, and that the majority relied on traditional disability service programs to attempt to meet specific needs.

Despite evidence that traditional disability services are often ineffective in supporting this student population (Dillon, 2007; Ellison et al. 2012; Hughes, 2009), participants (n=196) reported clearly that traditional disability service programs serve as the primary provider of academic, social and communication, and independent living supports for college students with Asperger's Disorder. Ellison et al. (2012), reported that traditional disability service programs are typically ineffective in supporting students in this population due to a lack of resources, a lack of professional knowledge of Asperger's Disorder, and their rigid focus on academic adjustments and accommodations. Results from this survey research indicated that due to a lack of specialized systems of support and dedicated resources, institutions of higher education are not currently prepared to meet the academic, social and communication, and independent living needs of students with Asperger's Disorder as described in the *Benchmarks of Effective Supports for College Students with Asperger's Disorder*.

Implications of the Study

Although the *Benchmarks of Effective Supports for College Students with Asperger's Disorder* was used as a measure to assess readiness, this study was not intended to recommend or emphasize a particular strategy or academic, social and communication, or independent living support. Although their disorder has core characteristics, individuals with Asperger's Disorder experience the condition to varying degrees (APA, 2000; Ellison, Clark, Cunningham, & Hansen, 2012; VanBergeijk, Klin, & Volkmar, 2008), eliminating a "one-approach-fits-all" option.

The prevalence of Asperger's Disorder within higher education is rising, making it necessary to cultivate a campus community that understands the disorder and can employ the strategies most effective for supporting those with the disorder. This research highlights general areas in which challenges exist and provides a general description of the current readiness of higher education to support those with the disorder. The results of this study may inspire future research into specific accommodations and support techniques effective in public institutions.

Wechsler (1981/2007) described an historical culture of fear that existed within higher education during eras when non-traditional students were entering college. The author suggested that issues related to race, sex, ethnicity, religious faith, economic status, and disability created turmoil on college campuses as students of minority integrated the traditional college student majority. In each of those cases, institutions of higher education evolved to meet the needs of new, growing populations of students. This study heralds the increasing prevalence of students with Asperger's Disorder entering college, and describes a system of higher education that is poorly prepared to meet their needs. Further, the study demonstrates that very few disability service professionals recognize the needs for specialized, dedicated systems of support for

students with Asperger's Disorder and, as a result may be delivering ineffective and incomplete services.

This study also brings attention to the integral role a college education may play in the economic success of individuals diagnosed with Asperger's Disorder. It is known that fewer than 24 % of adults with cognitive disabilities are employed, and those in the work force are typically under-employed and earn lower wages than non-disabled peers (Butterworth, Migliore, Nord, and Gelb, 2012). Autism Works (2012) reported the proportionate employment rate of those diagnosed with autism spectrum disorders is comparable to those significantly challenged by multiple disorders, and well below the proportionate rate of workers who have learning disabilities or traumatic brain injuries. In addition, the fact sheet produced by the advocacy group informs the reader that most employees diagnosed with an autism spectrum disorder earn less than \$7.25 per hour, work on average less than 20 hours a week, and were employed 36% fewer hours weekly than all adults with other disabilities.

A completed college education traditionally demonstrates to potential employers that a job applicant has reached a level of emotional and intellectual maturity, acquired employment-related skills, and has the determination and persistence necessary to reach a desired goal. A college education, therefore, may be one of the most effective ways for individuals in this population to overcome employment barriers. This study suggested that public institutions of higher education are currently unprepared to support students with average to superior intelligence but severely impaired social, communication, and independent living challenges. In order to meet the needs of both our society and this burgeoning student population, on-campus services must address more holistic needs, be removed from traditional disability service programs, and become integrated into the cultural fabric of the institution.

Limitations of the Study

This study was designed to explore the current readiness of four-year, degree-granting public institutions to provide evidence-based supports to college students with Asperger's Disorder. This type of institution was chosen specifically to assess the independent living-related activities inherent in a traditional, campus-living college experience. It is understood, however, that students with Asperger's Disorder also enroll in other types of institutions, including community colleges, which may not have a residential component. This study is limited in that it examines only one possible type of college experience. This study is also limited in scope. Despite a large survey population (N=578) and a survey response of 40% (n=233), some participants skipped several questions on the survey. IBM SPSS Statistics Version 20 data analysis software identified and removed this systems-missing data, which reduced the survey population to 196 (n=196, 85%) responses.

Researchers investigated the experience of college students diagnosed with Asperger's Disorder because this is a student population recognized as growing in higher education. This study does not investigate other autism spectrum disorders, specifically Autistic Disorder and Pervasive Developmental Disorder Not Otherwise Specified (PDD NOS). Although characteristics of those autism-related disorders are similar, it may be that individuals diagnosed with Autistic Disorder or PDD NOS may experience higher education differently than do students with Asperger's Disorder.

Finally, the design of the survey created limitations. Researchers chose to categorize survey items in two categories: *systems of services* and *dedicated instructional services*. How the items were delivered, however, may have caused participants to believe some questions to be redundant. This possible confusion may be one reason for the systems-missing data.

Suggestions for additional research

- An investigation should be conducted to determine the readiness of community colleges and private institutions to support college students diagnosed with Asperger's Disorder.
- Future research should be conducted to determine the specific academic, social and communication, and independent living supports most effective in meeting the needs of college students diagnosed with various forms of autism spectrum disorders. This study was limited to college students diagnosed with Asperger's Disorder. Students diagnosed with other autism spectrum disorders, particularly Autistic Disorder and Pervasive Developmental Disorder Not Otherwise Specified (PDD NOS) would benefit from an exploration into strategies that may support them effectively in higher education.
- A new edition of the Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-5) will be published in Spring, 2013 (Autism Society of America [ASA], 2013). According to the ASA, all autism-related disorders (Autistic Disorder, Asperger's Disorder, and PDD NOS) will be incorporated into one diagnosis, titled "Autism Spectrum Disorders" in order to improve diagnostic and treatment services. It is impossible at this writing to comment with certainty as to how this change may affect the recognized support needs of college students currently diagnosed with Asperger's Disorder. However, it is recommended that future research investigate the academic, social and communication, and independent living needs of college students with Autism Spectrum Disorder to ensure service are appropriately designed.
- Despite a 40% (n=233) response to the survey population (n=578), an electronic format may well have affected the response rate. If replicated, a mixed method of delivery that combines electronic and paper versions of the survey may increase the response rate. In

addition, a mixed-method design that incorporates a qualitative case study of students diagnosed with Asperger's Disorder may provide deeper insight into the phenomenon.

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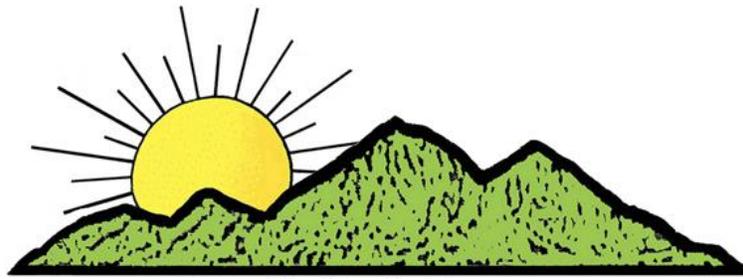
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APPENDIX A

Benchmarks of Effective Supports for College Students with Asperger's Disorder

Checklist



The West Virginia
Autism Training Center
 at Marshall University

Benchmarks of Effective Supports
for
College Students with Autism Spectrum Disorders

The *Benchmarks of Effective Supports for College Students with Autism Spectrum Disorders* (ASD) is an assessment tool with which to determine the readiness of specific institutions of higher learning to support the academic, social, and independent living needs of students diagnosed with ASD. Place an “X” in the column that best describes the availability of each specific support listed. A section to list specific items or needs necessary for making supports fully available exists, as does a section for “Notes” on the final page.

Campus Living Supports Effective Services May Include:	Supports N/A To My Needs	Supports Not Available	Supports Partially Available	Supports Fully In Place	Specific Items Or Needs To Make Supports Fully Available
1. Dedicated finances and on-campus resources for supporting students with ASD					
2. On-campus expertise regarding ASD and the supports necessary for an effective college experience					
3. Professionals or paraprofessionals who assist with the development of on-campus social networks					

4. Professionals or paraprofessionals who assess and teach independent living skills					
5. Mentoring services that support organizational needs, such as: goal setting, meeting deadlines, chunking assignments, planning for off-campus travel, etc.					
6. Mentoring services that assist students in recognizing a need for self-advocacy, and to support skill development for carrying out the activity					
7. Professionals or paraprofessionals who facilitate social learning and skill development					

<p style="text-align: center;">Academic Supports</p> <p>Effective Services May Include:</p>	<p style="text-align: center;">Supports N/A To My Needs</p>	<p style="text-align: center;">Supports Not Available</p>	<p style="text-align: center;">Supports Partially Available</p>	<p style="text-align: center;">Supports Fully In Place</p>	<p style="text-align: center;">Specific Items Or Needs To Make Supports Fully Available</p>
<p>1. Access to basic academic adjustments and reasonable modifications (i.e. extended time on tests, note taking services, etc.) necessary for success in the classroom</p>					
<p>2. Professionals available to provide information, support, and assistance to faculty and academic staff</p>					
<p>3. Existing systems dedicated to teaching self-advocacy and disclosure skills necessary for positive academic outcomes</p>					
<p>4. Professional or paraprofessional staff available to provide assistance with academic organization, guidance, and mentoring</p>					
<p>5. Existing systems that provide specialized assistance to instructors, staff, and other college personnel to aid or improve academic outcomes</p>					
<p>6. An on-campus support program that provides traditional academic accommodations, but recognizes the importance of delivering supports for identified non-academic needs</p>					

<p style="text-align: center;">Non-Academic Supports</p> <p>Effective Services May Include:</p>	<p style="text-align: center;">Supports N/A To My Needs</p>	<p style="text-align: center;">Supports Not Available</p>	<p style="text-align: center;">Supports Partially Available</p>	<p style="text-align: center;">Supports Fully In Place</p>	<p style="text-align: center;">Specific Items Or Needs To Make Supports Fully Available</p>
<p>1. Professional or paraprofessional staff available to teach skills necessary for social networking</p>					
<p>2. Professional or paraprofessional staff available to teach, and mentor the development of, social communication skills</p>					
<p>3. Professional or paraprofessional staff available to provide assistance with identifying available on-campus and off-campus resources</p>					
<p>4. Professional or paraprofessional staff available to provide assistance with learning or improving independent living skills</p>					
<p>5. Mental health professionals trained to provide assessment, counseling, and other therapeutic services to students with ASD</p>					

Notes: _____

APPENDIX B
SURVEY INSTRUMENT

ASSESSING THE READINESS OF HIGHER EDUCATION TO INSTRUCT AND SUPPORT STUDENTS WITH ASPERGER'S DISORDER

Survey

Directions: Please complete the survey items below, which are designed to determine the readiness of higher education to support the academic, social, and independent living needs of college students diagnosed with Asperger's Disorder (AD). After each survey item, choose the descriptor that best fits your institution's current ability to meet the support needs of this student population. Please check off only one response per survey item. Do not provide information that identifies you or your institution. This survey is voluntary and the identity of you and your institution will remain anonymous. By completing the survey you agree to participate in this dissertation research.

1. I agree to continue:

- Yes
- No

Area of Support: Campus Living Supports

This campus has (choose one):

2. Dedicated finances and on-campus resources for supporting students with AD

- No, these supports do not currently exist in any form on campus
- These supports exist, but within the traditional structure provided to all students with disability
- Some portion of these specific supports is dedicated to students with AD
- Yes, these dedicated supports exist fully on this campus for students with AD

3. On-campus expertise regarding AD and the supports necessary for an effective college experience

- No, there is no identified source on campus to provide information and expertise about AD
- Some personnel have attended workshops or training about the disorder
- Some personnel working with students have extensive experience with the disorder
- Yes, there is an identified source on campus to provide information and expertise about AD

4. Professionals or paraprofessionals who assist students with AD with the development of on-campus social networks

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

5. Professionals or paraprofessionals who assess and teach students with AD independent living skills

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability

- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

6. Mentoring services that support organizational needs, such as: goal setting, meeting deadlines, chunking assignments, planning for off-campus travel, etc.

- No, these supports do not currently exist in any form on campus
- These supports exist, but within the traditional structure provided to all students with disability
- Some portion of these specific supports is dedicated to students with AD
- Yes, these dedicated supports exist fully on this campus for students with AD

7. Mentoring services that assist students with AD in recognizing a need for self-advocacy, and to support skill development for carrying out the activity

- No, these supports do not currently exist in any form on campus
- These supports exist, but within the traditional structure provided to all students with disability
- Some portion of these specific supports is dedicated to students with AD
- Yes, these dedicated supports exist fully on this campus for students with AD

8. Professionals or paraprofessionals who facilitate social learning and skill development for students with AD

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

<p><u>Area of Support: Academic Supports</u></p>

This campus provides/has (choose one):

9. Access to basic academic adjustments and reasonable modifications (i.e. extended time on tests, note taking services, etc.) necessary for success in the classroom

- No, these supports do not currently exist in any form on campus
- These supports exist, but within the traditional structure provided to all students with disability
- Some portion of these specific supports is dedicated to students with AD
- Yes, these dedicated supports exist fully on this campus for students with AD

10. Professionals available to provide information, support, and assistance to faculty and academic staff regarding students with AD

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

11. Existing systems dedicated to teaching self-advocacy and disclosure skills necessary for positive academic outcomes for students with AD

- No, these supports do not currently exist in any form on campus
- These supports exist, but within the traditional structure provided to all students with disability
- Some portion of these specific supports is dedicated to students with AD
- Yes, these dedicated supports exist fully on this campus for students with AD

12. Professional or paraprofessional staff available to provide assistance with academic organization, guidance, and mentoring to students with AD

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

13. Existing systems that provide specialized assistance to instructors, staff, and other college personnel to aid or improve academic outcomes for students with AD

- No, these supports do not currently exist in any form on campus
- These supports exist, but within the traditional structure provided to all students with disability
- Some portion of these specific supports is dedicated to students with AD
- Yes, these dedicated supports exist fully on this campus for students with AD

14. An on-campus support program that provides traditional academic accommodations, but recognizes the importance delivering supports for identified non-academic needs

- No, these supports do not currently exist in any form on campus
- These supports exist, but within the traditional structure provided to all students with disability
- Some portion of these specific supports is dedicated to students with AD
- Yes, these dedicated supports exist fully on this campus for students with AD

Area of Support: Non-Academic Supports

This campus has (choose one):

15. Professional or paraprofessional staff available to teach students with AD the skills necessary for social networking

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

16. Professional or paraprofessional staff available to teach, and mentor the development of, social communication skills to students with AD

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

17. Professional or paraprofessional staff available to provide assistance to students with AD with identifying available on-campus and off-campus resources

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

18. Professional or paraprofessional staff available to provide assistance to students with AD with learning or improving independent living skills

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

19. Mental health professionals trained to provide assessment, counseling, and other therapeutic services to students with AD

- No, there is no identified staff to provide this assistance
- Staff exist to help, but within the traditional structure provided to all students with disability
- Some portion of this specific support is dedicated to students with AD
- Yes, dedicated, identified staff exists on campus to provide this support to students with AD

20. What is the Carnegie classification of your institution? (Select only one):

- Doctoral-granting university
- Master's college and university
- Baccalaureate college and university
- Tribal

21. Level of doctoral-granting university:

- RU/VH Research university (Very high research activity)
- RU/H Research university (High research activity)
- DRU- Doctoral / Research university

22. Level of master's college and university:

- Master's L (Larger programs)
- Master's M (Medium programs)
- Master's S (Smaller programs)

23. Level of baccalaureate college and university

- Bac / A & S (Baccalaureate college – Arts and Sciences)
- Bac / Diverse (Baccalaureate college – Diverse Fields)
- Bac / Associates (Baccalaureate college – Baccalaureate & Associate colleges)

24. Type of Tribal institution

- Tribal college

APPENDIX C

ANONYMOUS SURVEY CONSENT LETTER FOR ELECTRONIC SURVEY



www.marshall.edu

WV Autism Training Center
College of Education and Human Services
One John Marshall Drive
Huntington, WV 25755-2430
www.marshall.edu/coe/atc/

Study number: 355396
Approved on: 7/5/12
Expires on: 7/5/13

Anonymous Survey Consent

You are invited to participate in a research project entitled “ASSESSING THE READINESS OF HIGHER EDUCATION TO INSTRUCT AND SUPPORT STUDENTS WITH ASPERGER’S DISORDER,” designed to explore the readiness of colleges and universities in the United States to instruct and support students diagnosed with Asperger’s Disorder. The study is being conducted by principal investigator Michael Cunningham, Ed.D., and co-investigator Marc Ellison from Marshall University. This research is part of a doctoral dissertation for the co-investigator.

This anonymous survey comprises 18 items, and should take no more than ten minutes to complete. Do not put your name or other identifying information anywhere on the form. There are no known risks involved with this study. Participation is completely voluntary and there will be no penalty or loss of benefits if you choose to not participate in this research study or to withdraw. If you choose not to participate you may disregard this electronic communication or return the survey blank. If you participate you may choose to not answer any question by simply leaving it blank. Completing the survey indicates your consent for use of the answers you supply. If you have any questions about the study you may contact Marc Ellison at 304-696-2848.

If you have any questions concerning your rights as a research participant you may contact the Marshall University Office of Research Integrity at (304) 696-4303. By completing this survey and returning it you are also confirming that you are 18 years of age or older. Please keep this page for your records.

Sincerely,
Marc Ellison, MA, LPC
Doctoral Student, Marshall University
Marshall University IRB

APPENDICES D, E, F

INTRODUCTORY STATEMENT OF PERIODIC EMAILS

INITIAL EMAIL

November 14, 2012

Subject: Survey Regarding College Students With Asperger's Disorder

Dear Disability Support Professional:

You are invited to participate in a research project that investigates the readiness of colleges and universities in the United States to instruct and support college students diagnosed with Asperger's Disorder.

The study is being conducted by principal investigator Michael Cunningham, Ed.D., and co-investigator Marc Ellison from Marshall University. This research is part of a doctoral dissertation for the co-investigator. This survey, which can be accessed at the link below, is comprised of 18 items and should take no more than a few minutes to complete. Participation is voluntary, anonymous, and poses no known risks. Your participation will, however, provide valuable insight into an issue currently important in higher education.

Please review the attached IRB-stamped consent letter. If you choose not to participate you may disregard this electronic communication. If you have any questions about the study you may contact Marc Ellison at 304-696-2848, or ellison13@marshall.edu

The link to the survey is here: <https://www.surveymonkey.com/s/MKPK5ZT>

Thank you for your time and for your valuable contribution to the topic.

Marc

Marc Ellison, MA, LPC
Interim Associate Director of Training
West Virginia Autism Training Center
Marshall University
Office: Old Main 316
Phone: 304/696-2848
E-Mail: ellison13@marshall.edu

FOLLOW-UP TO INITIAL EMAIL

November 29, 2012

Subject: Survey Regarding The Support Of College Students With Asperger's Disorder: Second Opportunity

Dear Disability Support Professional:

You are invited to participate in a research project that investigates the readiness of colleges and universities in the United States to instruct and support college students diagnosed with Asperger's Disorder. This email provides an opportunity to participate for those unable to complete the anonymous survey first emailed on November 14, 2012. If you completed that survey, thank you. You may disregard this reminder.

The study is being conducted by principal investigator Michael Cunningham, Ed.D., and co-investigator Marc Ellison from Marshall University. This research is part of a doctoral dissertation for the co-investigator. This survey, which can be accessed at the link below, is comprised of 18 items and should take no more than a few minutes to complete. Participation is voluntary, anonymous, and poses no known risks. Your participation will, however, provide valuable insight into an issue currently important in higher education.

Please review the attached IRB-stamped consent letter. If you choose not to participate, or if you participated when the first email was distributed two weeks ago, you may disregard this electronic communication. If you have any questions about the study you may contact Marc Ellison at 304-696-2848, or ellison13@marshall.edu

The link to the survey is here: <https://www.surveymonkey.com/s/MKPK5ZT>

Thank you for your time and for your valuable contribution to the topic.

Marc

Marc Ellison, M.A., LPC. ALPS
Interim Associate Director of Training
West Virginia Autism Training Center
Marshall University
Office: Old Main 316
Phone: 304/696-2848
E-Mail: ellison13@marshall.edu

FINAL ELECTRONIC EMAIL

December 10, 2012

Subject: Asperger's Disorder In College: A National Survey

Dear Disability Support Professional:

Your input is critically important to this research project that investigates the overall state of readiness of colleges and universities in the United States to instruct and support college students diagnosed with Asperger's Disorder. The study will not provide data identifiable to any school or individual, but rather seeks to provide the higher education community information about the status of an issue known to exist nationally, but for which there is little data.

This email is a follow-up reminder for those unable to complete the anonymous survey emailed earlier in November, 2012. If you completed the survey already, thank you. You may disregard this reminder.

The study is being conducted by principal investigator Michael Cunningham, Ed.D., and co-investigator Marc Ellison from Marshall University. This research is part of a doctoral dissertation for the co-investigator. This survey, which can be accessed at the link below, is comprised of 18 items related to support, and should take no more than a few minutes to complete. Participation is voluntary, anonymous, and poses no known risks.

Please review the attached IRB-stamped consent letter. If you choose not to participate, or if you participated when earlier emails were distributed, you may disregard this electronic communication. If you have any questions about the study you may contact Marc Ellison at 304-696-2848, or ellison13@marshall.edu

The link to the survey is here: <https://www.surveymonkey.com/s/MKPK5ZT>

Thank you for your time and for your valuable contribution to the topic.

Marc

Marc Ellison, M.A., LPC. ALPS
Interim Associate Director of Training
West Virginia Autism Training Center
Marshall University
Office: Old Main 316
Phone: 304/696-2848
E-Mail: ellison13@marshall.edu

APPENDIX G

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER



www.marshall.edu

Office of Research Integrity

FWA 00002704
IRB1 #00002205
IRB2 #00003206

Institutional Review Board
401 11th St., Suite 1300
Huntington, WV 25701

July 5, 2012

Michael Cunningham, Ed.D.
Leadership Studies, MUGC

RE: IRBNet ID# 355396-1

At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Cunningham:

Protocol Title: [355396-1] ASSESSING THE READINESS OF HIGHER EDUCATION TO INSTRUCT AND SUPPORT STUDENTS WITH ASPERGER'S DISORDER

Expiration Date: July 5, 2013

Site Location: MUGC

Submission Type: New Project

APPROVED

Review Type: Exempt Review

In accordance with 45CFR46.101(b)(2), the above study and informed consents were granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee for the period of 12 months. The approval will expire July 5, 2013. A continuing review request for this study must be submitted no later than 30 days prior to the expiration date.

This study is for student Marc Ellison.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral) Coordinator Michelle Woomer, at 304-696-4308 or woomer3@marshall.edu. Please include your study title and reference number in all correspondence with this office.

APPENDIX H
CURRICULUM VITAE

L. Marc Ellison
Ellison13@marshall.edu

Education: Marshall University Graduate College
Doctor of Education in Educational Leadership, 2013

Marshall University, Huntington, West Virginia
M.A., Counseling, 2001

Marshall University, Huntington, West Virginia
B.A. Counseling and Rehabilitation, 1994

Credentials: Licensed Professional Counselor (#1839); Approved Licensed Professional Supervisor (ALPS) by the West Virginia Board of Examiners in Counseling

Professional

Experience: 2010-Present: Associate Director of Training,
WV Autism Training Center, Marshall University
Huntington, WV

2006-2010: Program Coordinator, College Program for Students with Asperger's Disorder
WV Autism Training Center, Marshall University
Huntington, WV

2003-2006: Program Director, Behavioral Health Advocacy
Legal Aid of West Virginia

2002-2003: Director, Adult Community Services
The Homestead
Des Moines, Iowa

1985-2002: Director of Community Programs (last of several positions)
Autism Services Center
Huntington, WV

Media Co-investigator in a collaborative research project with the University of Alabama, focused on quantifying support strategies for college students with autism spectrum disorders. (Primary investigator is Dr. Laura Klinger.)

Co-producer of the educational video *From High School to College: How Students Asperger's Syndrome Make the Transition at Marshall University* (2009)
Link: <http://www.youtube.com/watch?v=PKRUeGJR-aM>

Interviewed by ABC's Good Morning America for a story on supports for college students with ASD Link: <http://abcnews.go.com/Video/playerIndex?id=4573336>

Emmons, J., McCurry, S., Ellison, M., Klinger, M.R., & Klinger, L.G. (2010). College programs for students with ASD: Predictors of successful college transition. Presented at the International Meeting for Autism Research, Philadelphia, PA.

Ellison, M., Hieneman, et al. (2011) *Ethan's Alternative Tomorrow: A PATH Toward Social Inclusion*. Parenting Special Needs Magazine; March / April edition. Found at: <http://www.mydigitalpublication.com/publication/?i=63594>

**IRB -
Approved
Research
Activities**

The Integrated Self Advocacy Curriculum for Students with Autism Spectrum Disorders (Principal Investigator). With Barbara Becker-Cottrill, Ed.D., Brenda Smith Myles, Ph.D., Valerie Paradiz, Ph.D., and Andrew Nelson, MA. (2011)

Effective Accommodations for Educating College Students Diagnosed with Autism Spectrum Disorders (Principal Investigator). With Michael Cunningham, Ed.D. (2011)

The Role of Professor-Student Relationship in the Effective Education of College Students with Autism Spectrum Disorders (Principal Investigator). With Linda Spatig, Ed.D. (2012)

Understanding the Role of Classroom and Campus Accommodations in the Effective Education of College Students with Asperger's Disorder (Principal Investigator). With Michael Cunningham, Ed.D., Rebecca Hansen, MA, and Jackie Clark, MAT (2012)

Assessing the Readiness of Higher Education to Instruct and Support Students with Asperger's Syndrome (Co-Investigator with Michael Cunningham, Ed.D.)

**Higher
Education**

Maintain graduate faculty status at Marshall University

Undergraduate courses taught: Counseling Theories and Techniques; Social and Cultural Foundations of Counseling; Students with ASD in Higher Education (undergraduate special topics)

Graduate courses: Human Growth and Development; Mental Health Internship; Crisis Counseling; Workforce Transitions for College Students with ASD (special topics), Asperger's Disorder and Sexuality (special topics); Co-taught special topics class Counseling Individuals with Developmental Disabilities with Violette Eash, Ph.D.;